HAIC-HIWC Science Team Publication Update

Prepared by J. W. Strapp

**Presented at the HAIC-HIWC Science Team Meeting,
17-May-2016, Toronto, Canada**

Background

- HAIC and HIWC science groups agreed to share information on active research and publications in advance to
  - Minimize overlap in specific research activities
  - Promote collaboration on research of mutual interest
  - Minimize conflicts on authorships of articles
- A list of proposed articles was first assembled in December 2013, and has been continually updated at each HAIC-HIWC Science Team meeting since.
- This list informs the HAIC-HIWC Science Team of activities.
  - Research overlap has been more or less reconciled in negotiation in 2013
  - Going forward, each researcher should contact other researchers for collaboration or concerns about authorships
  - Strapp and Schwarzenboeck do not ‘police’ the list.

Material Distributed

- HAIC-HIWC-article-list-and-proposal-v6-pre-Toronto-May2016.pdf
  - List of proposed articles
  - New items or items that need discussing highlighted in red
  - Will cover red items and open floor for questions about other items
- HAIC-HIWC-Conference-Update-Toronto-May2016.pdf
  - New
  - Many conferences now lead directly to articles (e.g. SAE, AIAA), so propose to track these as well
  - Would like to track future conference plans in this document.
- List-of-HAIC-HIWC-Science-Team-completed-articles-16May2016.pdf
  - New
  - List of completed or nearly completed HAIC-HIWC Science Team articles from the program

ARTICLE LIST (PAGE 1)

Topic	Article #	Origin-ator	article	lead	co-authors	Comments	updates
Regulatory	1	HIWC, HAIC	In-situ deep convective cloud measurements to assess the new ice crystal icing certification envelope Appendix D", maybe to Journal of Aircraft	Strapp	Airbus, Schwazenboeck, Korolev, NASA, FAA, Airbus, Protat, others	Will not be written until all data is complete (Darwin, Cayenne, DC-8? Etc.)	re-confirm Oct. 2015 May 2016: reconfirmed
	56	HIWC	A review of the development of the new ice crystal icing envelope for engineering design and certification, and the development of concepts of in-flight cloud measurements for assessment.	Strapp	Boeing, Airbus and others depending on use of HAIC-HIWC data and final content	This results from a decision to split away from the project overview BAMS paper, and transfer the latter to Schwarzenboeck.	re-confirmed Oct. 2015: Article is well underway. Content is not fully decided, but will mainly emphasize pre-HAIC-HIWC work and review material. Plan to submit to J. Aerospace. May 2016: reconfirmed but delayed due to other priorities
	2	HIWC	Flight Deck Observations During Flight in High Ice Water Content Conditions	Ratvasky	Duchanoy, Bourdinot, Harrah, Strapp, Schwarzenboeck, Dezitter, Grandin		re-confirmed Oct. 2015: , UK. AIAA Aviation 2016, 13-17 June, 2016, Washington DC, (written paper) May 2016: delayed due to other priorities
	3	HIWC	Ice Water Content Variations Found in Anvil Clouds of Tropical Mesoscale Convective Systems, and application to engine events	Grzych	Strapp, Airbus, other HIWC and HAIC as appropriate	an applications to engine events' added to emphasize industry application (Strapp)	no reconfirmation in Oct. 2015. Grzych sent new proposal, not yet incorporated in this document. May 2016: not reconfirmed, check
	4	HAIC, HIWC	Radar extension of statistics for Appendix D/P	Protat or Strapp	Dezitter, Grandin, HIWC and HAIC as appropriate		reconfirmed at 11-Nov-15 meeting. Korolev wants to add Convair data and collaborators. May 2016:
	95	HIWC	An Investigation into Location and Convective Lifecycle Trends in an Ice Crystal Icing Engine Event Database	Bravin	Strapp, Mason	Update of Boeing event data base, case studies, comparison to Darwin clouds	May 2016: new article added after Prague conference (no F20 data).SAE Technical paper 2015-01-2030.
Project Overview	5	HAIC	In-situ cloud microphysical measurements of deep convection for aviation and science content: Climatological context Darwin & cayenne period, satellite analysis of MCS maxima…Experimental design, Field campaigns executions, BOM radar, MTSAT, Flight guidance, Alpha performance for RDT & NASA cloud retrievals. Campaign highlights: cockpit observations, F20 weather radar, PSD & IWC findings, W-band radar F20 research radar products. Field catalog?, Conceptual microphysical ideas/models, cloud modeling?	Schwarzenboeck	Strapp & extended list of HAIC and HIWC contributors as appropriate.	BAMS overview article, currently written;	Changed from Strapp to Schwarzenboeck as first author in 2014. Update Oct. 2015: re-confirmed, title changed to "HAIC-HIWC field project" May 2016: reconfirmed, article written

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Topic	Article #	Origin-ator	article	lead	co-authors	Comments	updates
Project Overview (cntd)	57	HAIC	Projet HAIC (High Altitude Ice Crystals): Utilisation du Falcon 20 dans le cadre d'un projet international dédié à la sécurité aéronautique.	Schwarzenboek	Leroy, Dezitter, Grandin, Protat, Delanoë, Strapp		changed to: SAFIRE : DES AVIONS AU SERVICE DE LA RECHERCHE EN ENVIRONNEMENT. Caroline Lamorthe, SAFIRE, Agnès Borbon, LISA (now LaMP), Alfons Schwarzenboeck LaMP UMR 6016 (Université Blaise-Pascal, CNRS) ; Jean-Christophe Canonici, SAFIRE. La Météorolgie (French journal). Replaces La Météorologie paper, May 2016: complete
Obser-vational Micro-physics	8	HIWC	On the origin of high altitude, high ice water content regions in oceanic deep convection	Korolev	Schwarzenboeck, Zipser, Varble, others as appropriate	Schwarzenboeck 2nd author; overview article and first microphsyics article of project, but with limited detail allowing other articles below to proceed	re-confirmed in Oct. 2015 May 2016: reconfirmed
	9	HIWC, HAIC	Characterization of the dynamical and microphysical (PSD, MMD, IWC, m(D), A(D), etc…) properties of HIWC regions and their spatiotemporal distribution using Falcon in-situ and radar data	Schwarzen-boeck	HAIC and HIWC as appropriate	Korolev 2nd author, CIRA interest	reconfirmed by Alfons during 11-Nov-15 meeting May 2016: not reconfirmed, check
	12	HIWC, HAIC	Initiation and evolution of ice in mixed phase convective environment: What can we learn from CPSD (and HSI or PDI or CPI probes) measurements	Schwarzen-boeck	Korolev, Esposito, Wobrock, Duroure, other HAIC and HIWC as appropriate	Korolev 2nd author; CIRA interest	title and author list change Oct. 2015: Initiation and evolution of ice in mixed phase convective environment: Measurement of droplets and small ice crystals in high IWC. . Combined use of CDP and 2D-S probes (F20 Cayenne data). D. Leroy, G. Febvre, P. Coutris, A. Schwarzenboeck, ,…& contributing scientists from HAIC-HIWC …? Comment 11-Nov-15, Korolev would like to discuss. May 2016: reconfirmed
	77	HAIC	Ice Crystal Sizes in High Ice Water Content Clouds. Part 2: Median Mass Diameter Statistics in Tropical Convection Observed within HAIC/HIWC.	Leroy	Fontaine, Schwarzenboeck, Strapp, Korolev, McFarquhar, Dupuy, Gourbeyre, Lilie, Protat, Delanoe, Dezitter and Grandin.		new article before Oct. 15 update: draft available, not yet submitted, probably JOAT May 2016: in review process (has it been submitted?)
	16	HAIC	Mass-diameter relationships constrained from ice particle imagery and absolute IWC data (IKP) as well as cloud radar reflectivities	Coutris	Leroy, Schwarzenboeck, Delanoe, Protat, Korolev, Strapp, McFarquhar, other HAIC and HIWC scientists as appropriate		reconfirmed in Oct. 2015. Authorship lead changed to Coutris May 2016: reconfirmed

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Topic	Article #	Origin-ator	article	lead	co-authors	Comments	updates
Obser-vational Micro-physics (cntd)	11	HAIC	The dynamical characteristics of HIWC regions and the link to the microphysical processes	Protat or Delanoë	Schwarzenboeck, Korolev, Zipser, Strapp, Grzych, other HAIC and HIWC as appropriate	This articles now proposed to include material from withdrawn article #23 regarding vertical profiles of radar reflectivity.	reconfirmed 11-Nov-15. Likely similar work in new titles below.Will be re-assessed later May 2016: not reconfirmed, check Reconfrimed for fall 2016
	78	HAIC	Ice Crystal Sizes in High Ice Water Content Clouds. Part 1: Mass-Size Relationships Derived from Particle Images and TWC for Various Crystal Diameter Definitions and Impact on Median Mass Diameter.	LeRoy	E. Fontaine, A. Schwarzenboeck, J. W. Strapp		new article before Oct. 2015: Submitted to JOAT. (in review process) May 2016: reconfirmed, in review process
	79	HAIC	Comprehensive analysis of ice crystal size and morphology from merged Darwin & Cayenne high IWC datasets in tropical convection. '	LeRoy	Coutris, Febvre, Fontaine, Schwarzenboeck, Strapp, Korolev, McFarquhar, Lilie, Protat, Delanoe, Dezitter ,Grandin, …& other contributing scientists from HAIC-HIWC		new article Oct. 2015 update May 2016: reconfirmed
	28	HIWC	The representation of ice cloud size distributions as gamma distributions as a function of meteorological and cloud conditions using observations from convective core anvils and other regions in tropical cloud systems	McFarquhar	HIWC and HAIC as appropriate		title change Oct. 2015: Zhu, S., G.M. McFarquhar, W. Wu, A. Schwarzenboeck, A.V. Korolev, J.W. Strapp and D. Leroy, 2016: The dependence of ice cloud size distributions represented as gamma functions on meteorological and cloud conditions: Results from the High Ice Water Content Campaign. J. Atmos. Sci., planned submission May 2016: reconfirmed, planned JAS
	29	HIWC	Development and implementation of mesoscale model parameterizations of single-particle properties and fallout using observations from tropical cloud systems	McFarquhar	Zhu, Korolev, Schwarzenboeck, Strapp, Leroy, Varble and Zipser		title change Oct. 2015: Development and implementation of model parameterizations for ice cloud single-scattering and fallout using observations from the High Ice Water Content Campaign. To submit to JAS 2016 May 2016: reconfirmed, planned JAS submission
	58	HIWC	Analysis of morphologies of ice crystals to build a database for a development of empirical habit classification scheme: A comparison between tropical and mid-latitude ice clouds	Um	McFarquhar, Schwarzenboeck, Korolev, Leroy, and Strapp		new article Oct. 2015: JGR intended May 2016: not reconfirmed, check

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Topic	Article #	Origin-ator	article	lead	co-authors	Comments	updates
Obser-vational Micro-physics (cntd)	13	HAIC	Microphysical findings in convection cores of A340 measurement data post-processed with m(D) relations and Robust probe efficiencies retrieved within HAIC.	Duroure	Grandin, Dezitter, Weber, Schwarzenboeck, Protat, Strapp		reconfirmed 11-Nov-15 by Alfons May 2016: not reconfirmed, check
	15	HAIC	Interaction of growth mechanisms of ice in tropical deep convection	Duroure	Schwarzenboeck, Korolev, HAIC and HIWC as appropriate		reconfirmed 11-Nov-15 by Alfons. Uses only Airbus data May 2016: not reconfirmed, check
	14	HAIC	Relative humidity inside and in the vicinity of deep convective clouds	DLR	Korolev, HAIC and HIWC as appropriate		at 11-Nov-15 meeting: need to re-confirm, Alfons to follow up. Korolev now has limited interest. May 2016: not reconfirmed, check
	86	HIWC	Data analysis, interpretation and presentation of in-situ measurements	McFarquhar	Baumgardner, Bansemer, Abel, Crosier, French, Rosenberg, Korolev, Schwarzenboeck, Leroy, Wu, Heymsfield, Detwiler, Field, Neuman, Axisa, Cotton, Um, Dong		May 2016: new article, AMS Monographs, to be submitted April 2016
	87	HIWC	The radiative consequences of frozen droplets and particles in the upper regions of convective storms	Um	McFarquhar, Stith, Korolev, Schwarzenboeck, Strapp, and Leroy		May 2016: new article, planned JAS
	96	HAIC	HAIC/HIWC Field Campaign - Specific Findings on PSD Microphysics in High IWC Regions from In Situ Measurements: Median Mass Diameters, Particle Size Distribution Characteristics and Ice Crystal Shapes	Leroy	Fontaine, Schwarzenboeck, Lilie, Delanoe, Protat, Dezitter, Grandin		May 2016: new article added to list after Prague conference. SAE Technical paper 2015-01-2087
Radar Studies	22	HAIC, HIWC	Comparison between CPOL microphysics and aircraft microphysics	May or Protat	Zipser, other HAIC and HIWC as appropriate		reconfirmed by Alain 11-Nov-15 May 2016: probably will not be pursued
	25	HAIC	Radar retrievals of HIWC using empirical relationships	Protat	Delanoë, HAIC and HIWC as appropriate		title change Oct. 2015: The Measured Relationship between Ice Water Content and Cloud Radar Reflectivity in Tropical Convective clouds. A. Protat, J. Delanoë, J. W. Strapp, E. Fontaine, D. Leroy, A. Schwarzenboeck, F. Dezitter, A. Grandin, M. Weber. Submitted to JAMC, summer 2015. May 2016: Accepted JAMC May 2016

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Topic	Article #	Origin-ator	article	lead	co-authors	Comments	updates
Radar Studies (cntd)	59	HAIC	Terminal fall speed of ice crystals in deep tropical convective storms from airborne multi-beam Doppler cloud radar observations	Protat	Delanoe, Schwarzenboeck, Strapp, Ratvasky, Lilie (and all other appropriate co-authors)	This work will very likely make use of IKP data to derive Vt-IWC (-T) relationships to develop a parameterization of ice terminal fall speed (including that of graupel) for large-scale models.	New article March 2015. JAMC. May 2016: reconfirmed, probably JAMC
	60	HAIC	RASTA: a 95 GHz radar for cloud studies.	Delanoe	Protat, Vinson, Brett, Caudoux, Bertrand, Pelon, Guignard, Ceccaldi, Schwarzenboeck, Fontaine, possibly US HIWC IKP PIs if we use IKP data to illustrate something: RASTA		New article March 2015: Probably JOAT May 2016: reconfirmed
	61	HAIC	Statistical microphysical properties of tropical deep convective cores using airborne multi-beam Doppler cloud radar observations	Delanoe	Protat, Schwarzenboeck, Strapp, Ratvasky, Lilie (and all other appropriate co-authors)	This is the paper where we will describe the Radonvar technique, evaluate it with the IKP data at flight-level, and produce statistical distribution of IWC, Dm, extinction as a function of temperature and / or height.	New article March 2015. Maybe JGR or JAS May 2016: reconfirmed
	62	HAIC	Simulations of radar reflectivity factors with oblates spheroids approximations; a comparison of retrieved Condensed water content and equivalent radar reflectivity factors	Fontaine	Leroy, Schwarzenboeck, Delanoë, Protat, Dezitter, Grandin, W. Strapp, L.E. Lilie		New article Oct. 2015. Planned for fall 2015 submission. May 2016: reconfirmed, and title changed to "Simulations of Radar Reflectivity Factors with Oblates Spheroids Approximations; a Method to Retrieve Condensed Water Content "
	63	HIWC	2014 HAIC/HIWC Flight Campaign: Radar Reflectivity from X-band Weather Radar	TBD	SAFIRE, Harrah, Grzych?, others	Harrah happy to lead or be a co-author	New article Aug. 2013: submitted by Steve Harrah after Aug. 2013 Science Team meeting; re-confirmed 11-Nov-15 May 2016: not reconfirmed, check
	64	HIWC	Comparison of X & W band Radar Reflectivities from the 2014 HAIC/HIWC Flight Campaign	Harrah	Protat, others		New article Aug. 2013: submitted by Steve Harrah after Aug. 2013 Science Team meeting; re-confrimed by Steve 11-Nov-15. May 2016: not reconfirmed, check

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Topic	Article #	Origin-ator	article	lead	co-authors	Comments	updates
Radar Studies (cntd)	85	HAIC	Microphysical Properties of MCS from cloud radar and in-situ observations.	Fontaine	Leroy, Schwarzenboeck, Delanoë, Protat, Dezitter, Grandin, W. Strapp, L.E. Lilie …..		May 2016: new article
	89	HIWC	Characterization of the Pilot X-band Radar Responses to the HIWC Environment during the Cayenne HAIC-HIWC 2015 Campaign	Wolde	Nguyenm Korolev, Bastian		May 2016: new article
	90	HIWC	Characterization of Tropical Convective Cloud Structure using an Airborne G-band Radiometer and W-band Cloud Radar in the HIWC Environment	Wolde	Nguyen, Korolev, Wang, Wechsler		May 2016: new article
	91	HIWC	Estimation of IWC in tropical convective cloud using dual frequency and polarization radars	Cuong	Wolde, Korolev, others		May 2016: new article
	92	HIWC	Performance of a compact elastic 355 nm airborne lidar in tropical and mid-latitude clouds	Baibakov	Wolde, Nguyen, Korolev, Wang, Wechsler		May 2016: new article
Cloud Modeling	26	HIWC	Using measurements of low radar reflectivity collocated with high ice water content to constrain representation of microphysical processes in cloud-resolving models of deep tropical convection	NASA GISS	HIWC and HAIC as appropriate	used A340 date for two papers at right	Title changed pre-Oct. 2015: High ice water content at low radar reflectivity near deep convection: Part I. Consistency of in situ and remote-sensing observations with stratiform rain column simulations. Fridlind, Ackerman, Grandin, Dezitter, Weber, Strapp, and Korolev, Atmos. Chem. Phys., 15, 11713-11728., doi:10.5194/acp-15-11713-2015 May 2016: complete
	65	HIWC				see above	Title changed pre-Oct. 2015: High ice water content at low radar reflectivity near deep convection: Part II. Evaluation of microphysical pathways in updraft parcel simulations, 2015. Ackerman, Fridlind, Grandlin, Dezitter, Weber, Strapp, and Korolev. Atmos. Chem. Phys., 15, 11729-11751, doi:10.5194/acp-15-11729-2015 May 2016: complete
	66	HIWC	Investigation of microphysical pathways to high ice water content observed during the HAIC-HIWC campaign using bin microphysics simulations	Fridlind	Ackerman, Korolev, Schwarzenboeck, Leroy, Strapp, et al.		new article Oct. 2015: Journal TBD. 3D simulations planned, details depending on future analysis of recently released data; appropriate author list TBD May 2016: reconfirmed, subject to funding

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Topic	Article #	Origin-ator	article	lead	co-authors	Comments	updates
Cloud Modeling (cntd)	67	HIWC	Use of NASA GPM satellite and HAIC-HIWC in situ data to evaluate tropical stratiform precipitation microphysics in the GISS ModelE GCM	Fridlind	Ackerman, Schwarzenboeck, Leroy, Strapp, Protat, et al.		new article Oct. 2015: if submitted proposal funded; appropriate author list TBD May 2016: reconfirmed, subject to funding
	68	HIWC	Use of NASA GPM satellite and HAIC-HIWC in situ data to investigate tropical stratiform microphysical pathways	van Lier-Walqui	Ackerman, Fridlind, McFarquhar, Williams, Schwarzenboeck, Leroy, Strapp, Protat, et al.		new article Oct. 2015: if submitted proposal funded; appropriate author list TBD May 2016: reconfirmed, subject to funding
	69	HIWC	Use of cloud-resolving models of deep tropical convection to interpret mechanisms and locations of conditions with low radar reflectivity collocated with high ice water content	NASA GISS	Zipser, HIWC and HAIC as appropriate		need to re-confirm in Oct. 2015: Strapp to follow up. May 2016: reconfirmed, subject to funding
	30	HIWC	Model investigations of ice water content and the properties of the updrafts feeding the upper tropospheric ice mass	Varble	Protat, Korolev,	New article inked to article 11 above.	title change Oct. 2015: Factors influencing the evolution of simulated high ice water content regions and comparison with observations from the High Ice Water Content campaign. Varble, Zipser, Strapp, Schwarzenboeck, and others if their observational datasets are used. May 2016: reconfirmed
	32	HIWC	Evaluation of WRF high resolution simulations of tropical convective systems using in-situ and remote sensing data measured during the 2014 HAIC/HIWC campaign	Varble or Zipser	HIWC and HAIC as appropriate		title change Oct. 2015: Comparison of observed and simulated convective drafts in tropical monsoon mesoscale convective systems during the High Ice Water Content campaign. Stanford, Varble, Zipser, Strapp, Schwarzenboeck, and others if their observational datasets are used May 2016: reconfirmed
	70	HIWC	Reducing bulk microphysics parameterization biases using High Ice Water Content field campaign measurements	Varble	Zipser, Strapp, Schwarzenboeck, and others if their observational datasets are used		New article Oct. 2015: Journal TBD. May 2016: reconfirmed
	33	HAIC	Comparisons of LaMP cloud model simulations with observations (especially 95 GHz radar)	Wobrock	HIWC and HAIC as appropriate	title provided by Strapp from Wobrock objectives	no re-confirmation in Oct. 2015; Alfons will follow up with Wofram May 2016: not reconfirmed, check
	34	HAIC	Sensitivity studies on ice nucleation rate and aggregation efficiencies	Wobrock	HIWC and HAIC as appropriate	title provided by Strapp from Wobrock objectives	no re-confirmation in Oct. 2015; Alfons will follow up with Wofram May 2016: not reconfirmed, check

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Topic	Article #	Origin-ator	article	lead	co-authors	Comments	updates
Cloud Modeling (cntd)	35	HIWC	Evaluation and improvement of high ice water content simulations in deep convective storms using the ACCESS model	Franklin	HIWC and HAIC as appropriate		title change Oct. 2015: Controls on phase composition and ice water content in a convection permitting model simulation of a tropical mesoscale convective system. Franklin and Protat. Journal probably QJRMS, to be sumitted early Nov. 2015 May 2016: accepted with major revision
	92	HIWC	Numerical Simulation of HIWC Conditions with the Terminal Area Simulation System	Proctor	Switzer		May 2016: New written paper for AIAA-2016
Satellite and Now-casting	36	HIWC	Nowcasting High Ice Water Content in Deep Convective Clouds Using Routinely Available Meteorological Products	Haggerty	HIWC and HAIC as appropriate (see right)		title change Oct. 2016: Development and Verification of a Detection Method for High Ice Water Content Regions. Haggerty, Black, McCabe, Cunning, Minnis, Strapp, Potts. In preparation Sept. 2015. Planned submission to JAMC. May 2016: reconfirmed, in preparation, to be submitted to ATCA
	71	HIWC	Climatology of HIWC conditions over North America	Haggerty	Black	No use of HAIC-HIWC data.	New article Oct. 2015: . To be submitted to JAMC. Not a HAIC-HIWC article. May 2016: not reconfirmed, check
	36	HIWC	Evaluation of satellite, radar, and model products for use in HIWC nowcasting (tentative title)	Haggerty	Black, Minnis/Ngyuen/Palikonda, Strapp, Potts, Grandin		New article Oct. 2015: In preparation Sept. 2015. Planned submission to JAMC. May 2016: in preparation, to be submitted to JAMC.
	37	HIWC	Development of a High Ice Water Content Icing Probability Index	NASA Langley	HIWC and HAIC as appropriate (see right)		title change Oct. 2016: Minnis, Yost, Bedka, Spangenberg, Palikonda, Nguyen, Strapp, and Grandin/Dezitter, 2015: A prototype method for diagnosing high ice water content probability using satellite imager data. J. Atmos. Oceanic Tech., in preparation. May 2016: reconfirmed
	~~41~~	~~HIWC~~	~~Comparisons of deep convective cloud microphysical properties from in situ measurements and satellite retrievals~~	~~NASA Langley~~	~~HIWC and HAIC as appropriate~~		no re-confirmation in Oct. 2015. Chris Yost to follow up. May 2016: withdrawn (combined with other paper)
	72	HIWC	Satellite-derived cloud property datasets for High Ice Water Content field experiments	Nguyen	Minnis, Bedka, Palikonda, Yost, Spangenberg, and Chee		new article Oct. 2015: Geosci. Data Jour., in preparation. May 2016: reconfirmed
	73	HIWC	Evaluation of satellite-derived ice water content profiles using in situ and RASTA data.	Yost	Smith, Minnis, Spangenburg, Nguyen,Protat, and Strapp		new article Oct. 2015: Atmos. Meas. Tech., in preparation. 11-Nov-15 Korolev suggests also use of Convair data. May 2016: reconfirmed

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Topic	Article #	Origin-ator	article	lead	co-authors	Comments	updates
Satellite and Now-casting (cntd)	~~74~~	~~HIWC~~	~~Relationships between overshooting deep convective cloud tops and high ice water content~~	~~Bedka~~	~~Yost,Spangenberg, Minnis, Protat, and Strapp~~		new article Oct. 2015: J. Appl. Meteor. Climatol., in preparation. May 2016: withdrawn (combined with other paper)
	38	HAIC	General paper on satellite detection of HIWC	Defer	Delanoë, Parol, Protat, other HIWC and HAIC as appropriate		title change pre-Oct. 2015: Overview of the HAIC Space-Borne Observation and Nowcasting of High Ice Water Content Regions Sub-Project and Mid-Term Results. Brenguier, De Laat, Delanoë, Dezitter, Faivre, Gounou, Grandin, Guignard, Meirink, Moisselin, Parol, Protat, and Vanbauce. SAE Technical Paper 2015-01-2123, 2015, doi:10.4271/2015-01-2123. May 2016: complete
	~~39~~	~~HAIC~~	~~CloudSat-CALIPSO detection of HIWC~~	~~Guignard or Ceccaldi~~	~~Delanoë, Protat, HAIC and HIWC as appropriate~~		no reconfirmation in Oct. 2015: Cancelled at suggestion of Protat at 11-Nov-15 meeting.
	40	HAIC	Verification and refining of High IWC detection algorithm developed in WP3.3 from remote sensing and in situ F20 measurements, Ground-based radar, Concurrent coincident space-based observations (LEO mission), possible submission	Meteo France	HIWC and HAIC as appropriate; collaborate with HIWC nowcasting if possible		no reconfirmation in Oct. 2015, possibly same as title #59. Alfons to follow up. May 2016: not reconfirmed, check
	75	HAIC	The Use of RDT Nowcasting Tool for Detecting Convective Areas Associated with High Ice Water Content during HAIC/HIWC Field Campaign	Gounou	Moisselin, Autones, Levaillant, Brenguier, Defer, Faivre		new title pre-Oct. 2015: SAE Technical Paper 2015-01-2124, 2015, doi:10.4271/2015-01-2124. May 2016: complete
	76	HIWC	Studies of Cloud Characteristics Related to Jet Engine Ice Crystal Icing Utilizing Infrared Satellite Imagery	Grzych	Tritz,Mason, Bravin, Sharpsten	Minimal use of HAIC-HIWC data	SAE Technical Paper 2015-01-2086, 2015, doi:10.4271/2015-01-2086. SAE 2015 International Conference on Icing of Aircraft, Engines, and Structures, Prague, Czech Republic. June 2015. May 2016: complete
	82	HAIC	Development of a cloud mask for detection of potential High Ice Water Content areas in geostationary SEVIRI satellite data	de Laat	Defer, Delanoe, Dezitter, Gounou, Grandin, Guignard, Meirink, Moisselin, F. Parol		May 2016: new article, written, not yet submitted
	83		A 10+ year climatology of High Ice Water Content occurrence in geostationary satellite data	de Laat	TBD		May 2016: new article, planned

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Topic	Article #	Origin-ator	article	lead	co-authors	Comments	updates
Satellite and Now-casting (cntd)	84	HAIC	Verification of a geostationary cloud mask algorithm for detection of High Ice Water Content areas.	de Laat	TBD		May 2016: new article, planned
Micro-physical Instru-ments	42	HIWC	TWC measurements of deep tropical convection using a new isokinetic evaporator"	Strapp, Lilie, or Ratvasky	Schwarzenboeck	coordinate with NRC	need to re-confirm in Oct. 2015 May 2016: reconfirmed, but no specific timetable
	43	HIWC	Robust Probe measurements compared to IKP and other data to document the Robust Probe's collection efficiency in order to validate previously acquired data taken using the Robust Probe	Strapp or Lilie, changed to Leroy	Schwarzenboeck, Airbus, HIWC and HAIC as appropriate	Similar title submitted by Schwarzenboeck, with Lilie as lead. Merged here.	re-confirmed Oct. 2015. May 2016: not reconfirmed, but probably switched to lead author Leroy, close collaboration Strapp, Lilie
	44	HIWC	Evaluation of the IKP probe's performance in natural icing	Lilie	Ratvasky, Lilie, Schwarzenboeck, HIWC and HAIC as appropriate	coordinate with NRC	title change Oct. 2015: Isokinetic TWC Evaporator Probe Development and Performance Testing for the HAIC-HIWC Darwin 2014 and Cayenne 2015 Field Campaigns, Lyle Lilie, J. Walter Strapp , Thomas Ratvasky, Craig Davison , Chris Dumont ; AIAA Aviation 2016, 13-17 June, 2016, Washington DC (written paper) May 2016: reconfirmed, changed to lead author Strapp, written paper to be submitted to AIAA in May 2016
	45	HAIC	Possible publication on Nephelometer capability improvement	Airbus	HAIC and HIWC as appropriate		no reconfirmation in Oct. 2015 May 2016: not reconfirmed, check
	46	HAIC	Improvements of measurements of size and concentration of small ice particles, and measurements of the phase composition of clouds with the new HSI probe	Esposito	Korolev, Wolde, Bachalo		no reconfirmation in Oct. 2015 May 2016: reconfirmed, and titled changed to "Application of High Speed Imaging (HSI) probe in the characterization of glaciated and mixed-phase conditions in deep convective clouds"
	48	HIWC	Possible technical report on performance aspects of IKP	NRC	Lilie, Ratvasky, Strapp, HAIC and HIWC as appropriate		no reconfirmation in Oct. 2015. Korolev thought it was ongoing. Strapp to follow up. May 2016: probably the new article 80 below
	49	HAIC	Icing detection based on electric phenomena (tribo electricity, induction),	Chazottes, Lalande	HAIC and HIWC if appropriate		no reconfirmation in Oct. 2015. Dezitter reconfirms on 11-Nov-15 May 2016: not reconfirmed, check
	80	HIWC	IKP2 system accuracy etc.	Davison	Strapp, Lilie, Ratvasky, Dumont	New article split off article 44 as separate work	May 2016: new article defined as requirement after Melbourne meeting, to be submitted to AIAA in May 2016
	81	HIWC	IKP2 performance part 2	Strapp	Strapp, Lilie, Ratvasky, Dumont, possibly others	continued performance results after May 2016 (e.g. NIST results)	May 2016: new written paper to be submitted to AIAA in May 2017

ARTICLE LIST (PAGE 11)

Topic	Article #	Originator	article	lead	co-authors	Comments	updates
Micro-physical Instru-ments (cntd)	88	HIWC	The role of submicron aerosol particles in the formation of high ice particle concentrations in mesoscale convective systems	Ladino	Korolev, and others		May 2016: new article for GRL, in preparation
	94	HIWC	IKP2 performance part 1	Strapp	Strapp, Lilie, Ratvasky, Dumont	Performance testing and wind tunnel comparisons to date	May 2016: new article defined as requirement after Melbourne meeting. Written paper submitted to AIAA-2016.
Appl. to Tunnel Simu-lations	50	HIWC	Comparisons of cloud data to NASA PSL simulation	NASA	HIWC and HAIC contributors		no reconfirmation in Oct. 2015. Ratvasky reconfirms 11-Nov-15, probably will be a conference report. May 2016: not reconfirmed, check
	51	HAIC	Comparison ice crystals generated in DGA test facility with those collected during the 2014 Darwin Field Campaign	DGA	HAIC and HIWC as appropriate		no reconfirmation in Oct. 2015. Dezitter to investigate and also add other papers of similar topic. May 2016: not reconfirmed, check
	52	HAIC	Comparison of simulated glaciated and mixed phase conditions in TU BS icing wind tunnel with the Falcon-20 Darwin data	TUBS	HAIC and HIWC as appropriate		no reconfirmation in Oct. 2015. Dezitter to investigate and also add other papers of similar topic. May 2016: not reconfirmed, check
Other	~~53~~	~~HIWC~~	~~Particle trajectories around the Falcon-20 aircraft~~	~~Bidwell (NASA)~~	~~HIWC and HAIC contributors~~		cancelled due to retirement (as per Tom Ratvasky, 21-Oct-15)
	54	HAIC	Numerical simulations of the INCAS ice crystal trajectory and ice accretion package	INCAS	HIWC and HAIC contributors, if any		no reconfirmation in Oct. 2015. Dezitter to investigate and also add other papers of similar topic. May 2016: not reconfirmed, check
	55	HAIC	Ice particles trajectory, impingement and accretion modeling and representativness	ONERA P.Villedieu	C.Tropea, D.Raps, HAIC and HIWC, if appropriate		no reconfirmation in Oct. 2015. Dezitter to investigate and also add other papers of similar topic. May 2016: not reconfirmed, check

UPCOMING CONFERENCE LIST – AIAA-2016

8TH AIAA ATMOSPHERIC AND SPACE ENVIRONMENTS CONFERENCE, JUNE 17, 2016, WASHINGTON, DC

Korolev and Wolde, 2016: Instrumentation and preliminary results obtained from the NRC Convair-580 during the High Ice Water Content field campaign in Cayenne in May 2015. (oral)

Davison, C. R., Strapp, J. W., Lilie, L., Ratvasky, T. P., and Dumont, C., " Isokinetic TWC Evaporator Probe: Calculations and Systemic Error Analysis", 2016, (written)

Lilie and SEA co-authors, HAIC/HIWC 2014 Darwin and 2015 Cayenne Flight Campaigns Update I
Presentation: Description and Results for a Simple Ice Crystal Detection System for Airborne Applications. (written)

Strapp, J. W., Lilie, L., Ratvasky, T. P., Davison, C. R., and Dumont, C., "Isokinetic TWC Evaporator Probe Development and Performance Testing for the HAIC-HIWC Darwin 2014 and Cayenne 2015 Field Campaigns", 2016, (written)

Strapp, J.W., A. Schwarzenboeck, J. Delanoë, F. Dezitter, C. Dumont, A. Grandin, A. Korolev, L. Lilie, R. Potts , A. Protat, and T. Ratvasky . " An Update on the Assessment of Appendix D/P Total Water Content from In-Situ Measurements of Deep Convective Clouds: Measurements from Two HAIC-HIWC Flight Campaigns, 2016, (oral)

Leroy, Delphine, Pierre Coutris, Emmanuel Fontaine, Alfons Schwarzenboeck, J. Walter Strapp, Lyle Lilie, Alexei Korolev, Greg McFarqhuar, Fabien Dezitter. **HAIC/HIWC field campaigns - specific findings on ice crystals characteristics in high ice water content cloud regions** (written)

Proctor, Fred H., “Numerical Simulation of HIWC Conditions with Terminal Area Simulation System,” (written)

Wolde., M., C. Nguyen, A. Korolev , M. Bastian, 2016: Characterization of the Pilot X-band Radar Responses to the HIWC Environment during the Cayenne HAIC-HIWC 2015 Campaign,” (??)

Wolde., M., C. Nguyen, A. Korolev , M. Bastian, 2016: Characterization of the Pilot X-band Radar Responses to the HIWC Environment during the Cayenne HAIC-HIWC 2015 Campaign,” (??)

Brown, A., M. Wolde, A. Korolev, 2016: In-situ Wind-fields Measured by the NRC Convair during HAIC-HIWC 2015,” (??).

UPCOMING CONFERENCE LIST – ICCP-2016

17TH INTERNATIONAL CONFERENCE ON CLOUDS AND PRECIPITATION, JULY 25-29, 2016.

McFarquhar, G.M., W. Wu, J. Finlon, S. Zhu, D. Stechman, R. Jackson, R.M. Rauber, B.F. Jewett, A. Schwarzenboeck, A. Korolev, D. Leroy, J.W. Strapp and M. Poellot, 2016: "Development of stochastic parameterizations of cloud microphysics for models and retrievals: Use of uncertainty in in-situ observations"

Fontaine, E., D. Leroy, A. Schwarzenboeck, P. Coutris, J. Delanoë, A.Protat, F. Dezitter , A. Grandin, W. Strapp, L.E. Lilie. "Simulations of Radar Reflectivity Factors at 94GHz: Ice Crystal Approximation with Oblate Spheroids".

Fontaine, E., D. Leroy, A. Schwarzenboeck, P. Coutris, J. Delanoë, A.Protat, F. Dezitter, A. Grandin, W. Strapp, L.E. Lilie, P. Minnis, C. Yost. "Variations of Ice Microphysical Properties in Tropical MCS Using Cloud In-Situ Data and Corresponding Radar Reflectivity Profiles"

Leroy, D., P. Coutris, E. Fontaine, A. Schwarzenboeck, J. W. Strapp, A. Korolev, G. McFarquhar, C. Gourbeyre, R. Dupuy, F. Dezitter, and A. Calmels, **"**HAIC/HIWC field project: ice crystal mass-size relationship in high ice water content cloud conditions".

Wolde, M., C. Nguyen, P. Gabriel, A. Korolev, 2016: "Characterization of Tropical Convective Cloud Structure using an Airborne G-band Radiometer and W-band Cloud Radar in the HIWC Environment"

Esposito, B,, Korolev, A., Wolde, M., Bachalo, W., *"*Application of High Speed Imaging (HSI) probe in the characterization of glaciated and mixed-phase conditions in deep convective clouds*." (oral only)*

Minnis, P., S. Sun-Mack, K. M. Bedka, R. Palikonda, W. L. Snith ,Jr., C. R. Yost, Y. Chen, and T. Chee, 2016: "Cloud retrievals for climate and weather using combinations of geostationary and polar-orbiting satellite imager data"

Fontaine, E., D. Leroy, A. Schwarzenboeck, P. Coutric, J. Delanoë, A. Protat, F. Dezitter, A. Grandin, L. E. Lilie, P. Minnis, and C. Yost, 2016: "Variations of ice microphysical properties in tropical MCS using cloud in-situ data and corresponding radar reflectivity profiles".

Franklin, C., and A. Protat, 2016: Impact of cloud microphysics on the phase composition of a tropical mesoscale convective system. International Conference on Clouds and Precipitation, 25-30 July 2016, Manchester, UK.

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21st AMS Satellite Meteor., Oceanogr., Climatol. Conf., Madison, WI, 15-19 August.
Yost, C. R., P. Minnis, K. Bedka, L. Nguyen, R. Palikonda, and D. Spangenberg, 2016: A prototype method for diagnosing high ice water content in near-real-time using passive satellite imagery. *21st AMS Satellite Meteor., Oceanogr., Climatol. Conf.*, Madison, WI, 15-19 August.

EUMETSAT 2016 (upcoming September 2016?)

Moisselin, J.-M., A. Gounou,F. Autonès, E. Defer, and F. Dezitter, The use of RDT (Rapidly Developing Thunderstorm) in the HAIC project (High Altitude Ice Crystals), EUMETSAT 2016 Conference, 2016.

SPIE. Lidar Technologies, Techniques, and Measurements for Atmospheric Remote Sensing Conference – 26-29 September, Edinburgh, UK

Baibakov, M. Wolde, C. Nguyen; A. Korolev, Z. Wang, P. Wechsler, 2016: Performance of a compact elastic 355 nm airborne lidar in tropical and mid-latitude clouds, *SPIE. Lidar Technologies, Techniques, and Measurements for Atmospheric Remote Sensing Conference – 26-29 September, Edinburgh, United Kingdom*

9th European Conference on Radar in Meteorology and Hydrology ERAD 2016, 10-14 October, Antalya, Turkey
Cuong N., M. Wolde, A. Korolev and others: "Estimation of IWC in tropical convective cloud using dual frequency and polarization radars", *ERAD 2016, 10-14 October, Antalya, Turkey – To be submitted*

18th AMS Conference on Aviation, Range and Aerospace Meteorology (ARAM), 97th AMS Annual Meeting, 22-26 January, 2017, Seattle, WA.
Haggerty, J., et al. likely two abstracts, titles and co-authors to be determined

AIAA 2017, 9th AIAA Atmospheric and Space Environments Conference (upcoming, June 2017)
Strapp, J. W., Lilie, L., Ratvasky, T. P., Davison, C. R., and Dumont, C., "Isokinetic TWC Evaporator Probe NIST Calibrations and Further Perfomance Testing", 2017, planned, 9th AIAA Atmospheric and Space Environments Conference. (probably written)

Strapp, J. W and co-authors TBD, "Assessment of Appendix D using in-situ cloud data", 2017, planned, 9th AIAA Atmospheric and Space Environments Conference (probably written)

LIST OF COMPLETE OR NEAR-COMPLETE WRITTEN PAPERS (P1OF 2)

Ackerman, A., Fridlind, A., Grandin, A., Dezitter, F., Weber, M., Strapp, J.W., and Korolev, A., High ice water content at low radar reflectivity near deep convection: Part II. Evaluation of microphysical pathways in updraft parcel simulations, 2015, *Atmos. Chem. Phys.,* 15, 11729-11751, doi:10.5194/acp-15-11729-2015.

Bravin, M., Strapp, J.W., and Mason, J.G., "An Investigation into Location and Convective Lifecycle Trends in an Ice Crystal Icing Engine Event Database," 2015, *SAE Technical paper 2015-01-2030.*

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Defer, E., Brenguier,J. L., De Laat, J., KNMI; Delanoe, J., Dezitter, F., Faivre, M., Gounou, A., Grandin, A., Guignard, A., Meirink, J. F., Moisselin, J.M., Parol, F., Protat, A., Vanbauce, C., **"**Overview of the HAIC Space-borne Observation and Nowcasting of High Ice Water Content Regions Sub-Project and Mid-Term Results," SAE 2015 Int. Conf. on Icing of Aircraft, Engines, and Structures, 22-25 June 2015 Prague, the Czech Republic, 2015, *SAE Technical paper 2015-01-2123.*

Franklin, C., and Protat, A.,"Controls on phase composition and ice water content in a convection permitting model simulation of a tropical mesoscale convective system," 2016, *Atmos. Chem. Phys.,* accepted with major revision.

Fridlind, A., Ackerman, A., Grandin, A., Dezitter, F., Weber, M., Strapp, J.W., and Korolev, A., "High ice water content at low radar reflectivity near deep convection: Part I. Consistency of in situ and remote-sensing observations with stratiform rain column simulations', 2015, *Atmos. Chem. Phys.,* 15, 11713-11728., doi:10.5194/acp-15-11713-2015.

Gounou, A., Moisselin, J.M., Autones, F., Levaillant, D., Brenguier,J. L., Defer, Faivre, M., Grandin, A., Dezitter, F., Turner, S., **"**The Use of RDT Nowcasting Tool for Detecting Convective Areas Associated with High Ice Water Content during HAIC/HIWC Field Campaign," 2015, *SAE Technical paper 2015-01-2124*.

Grzych, M., Tritz, T., Mason, J.G., Bravin, M., and Sharpsten, A.," Studies of Cloud Characteristics Related to Jet Engine Ice Crystal Icing Utilizing Infrared Satellite Imagery," 2015, *SAE Technical Paper 2015-01-2086.*

Lamorthe, C., Borbon, A., Schwarzenboeck, A., and Canonici, J.C., "Projet HAIC (High Altitude Ice Crystals): Utilisation du Falcon 20 dans le cadre d'un projet international dédié à la sécurité aéronautique," 2015, *La Météorolgie. (French Journal).*

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Leroy, D., Fontaine, E., Schwarzenboeck, A., Strapp, J.W, Lilie, L.E., Delanoe, J., Protat, A., Dezitter, F., and Grandin, A., "HAIC/HIWC Field Campaign - Specific Findings on PSD Microphysics in High IWC Regions from In Situ Measurements: Median Mass Diameters, Particle Size Distribution Characteristics and Ice Crystal Shapes," 2015, *SAE Technical paper 2015-01-2087.*

Leroy, D., Fontaine, E., Schwarzenboeck, A., Strapp, J.W, " Ice Crystal Sizes in High Ice Water Content Clouds. Part 1: Mass-Size Relationships Derived from Particle Images and TWC for Various Crystal Diameter Definitions and Impact on Median Mass Diameter," *J. Atmos. Oceanic Technol*., submitted, in journal review.

Leroy, D., Fontaine, E., Schwarzenboeck, A., Strapp, J. W., Korolev, A., McFarquhar, G., Dupuy, R., Gourbeyre, C., Lilie, L., Protat, A., Delanoe, J., Dezitter, F., and Grandin, A., "Ice Crystal Sizes in High Ice Water Content Clouds. Part 2: Median Mass Diameter Statistics in Tropical Convection Observed during the HAIC/HIWC Project", manuscript in authors' review.

Leroy, D., Coutris, P., Fontaine, E., Schwarzenboeck, A., Strapp, J.W, Lilie, L.E., Korolev, A., Greg McFarqhuar, G., and Dezitter, F., "HAIC/HIWC field campaigns - specific findings on ice crystals characteristics in high ice water content cloud regions. *8th AIAA Atmospheric and Space Environments Conference*, June 17, 2016, Washington, DC. (to be submitted as written paper)

Lilie and SEA co-authors, "HAIC/HIWC 2014 Darwin and 2015 Cayenne Flight Campaigns Update I
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Proctor, Fred H., "Numerical Simulation of HIWC Conditions with Terminal Area Simulation System," *8th AIAA Atmospheric and Space Environments Conference, Aviation 2016*, Washington DC. 13-17 June 2016. (to be submitted as written paper)

Protat, A., Delanoë, J., Strapp, J.W., Fontaine, E., Leroy, D., Schwarzenboeck, A., Dezitter, F., Grandin, A., and Weber, M., "The Measured Relationship between Ice Water Content and Cloud Radar Reflectivity in Tropical Convective Clouds," accepted, *J. Appl. Meteorology and Climatology..*

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