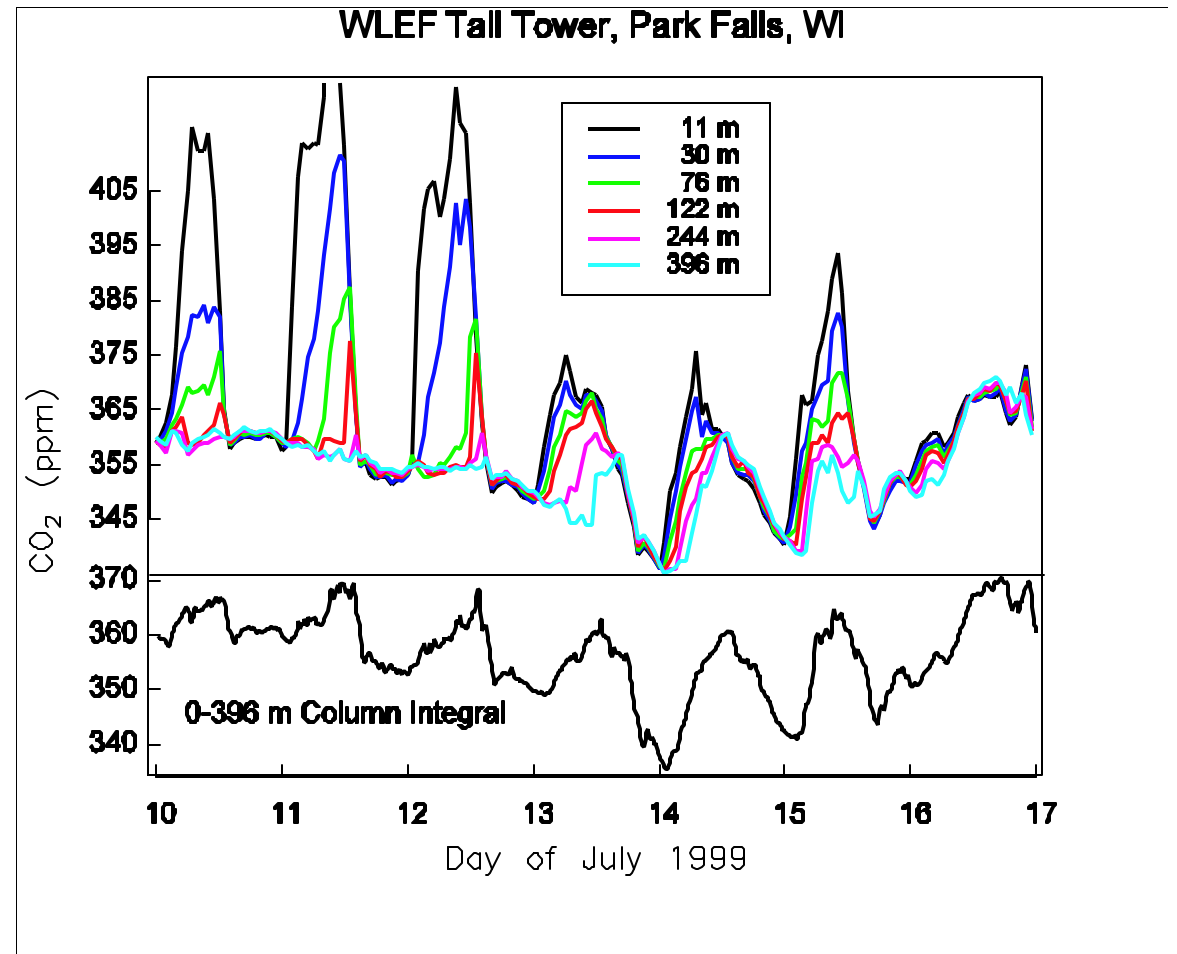
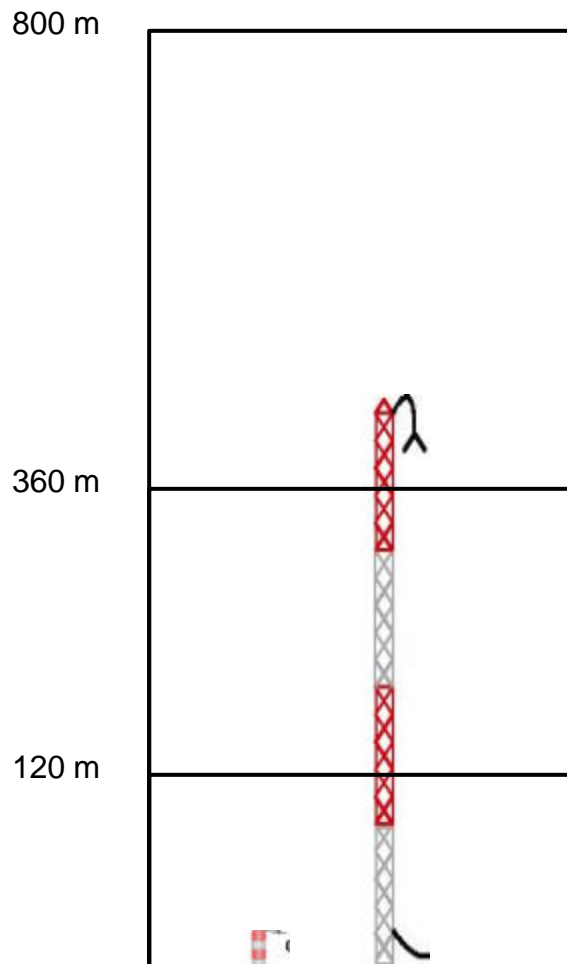


Representativeness

CDAS v 1.1 Implementation

- Model-data mismatch due to boundary-layer/stable-layer height errors and spatial flux heterogeneities
- Weighting in assimilation will be set using a parameterization based on land/ocean, day/night, z, and monthly NEE and FF
- Also, ground stations will not be allowed over vegetated or industrialized terrain

Vertical and horizontal model coarseness



Representativeness Formulae

- land = 1 over land, 0 over ocean
- night = 0 during day [6-18 LT], 1 during local night
- pbl = 1 below 1500 m agl, 0 above
- nsl = (500-z)/500 below 500 m, 0 above
- z ~ 60 m, 240 m, 580 m for lowest levels
- hem = 1.0 in N. Hem. and 0.5 in S. Hem.
- R matrix values set to

$$\text{hem} + \text{landmask} * (\text{pbl} * (5 + \text{nsl} * (50))) * \\ ((|\text{NEE}_{\text{monthly}}| + |\text{FF}_{\text{monthly}}|) / \max(|\text{NEE}_{\text{monthly}}|))$$

- also, anywhere $((|\text{NEE}_{\text{monthly}}| + |\text{FF}_{\text{monthly}}|) / \max(|\text{NEE}_{\text{monthly}}|))$ is greater than 0.05, ground station gets a 'use' of 0