

# ***SFP*<sup>2</sup> : Evaluation of Allsky Single Footprint retrievals using Artificial Intelligence methods and Optimal Estimation methods**

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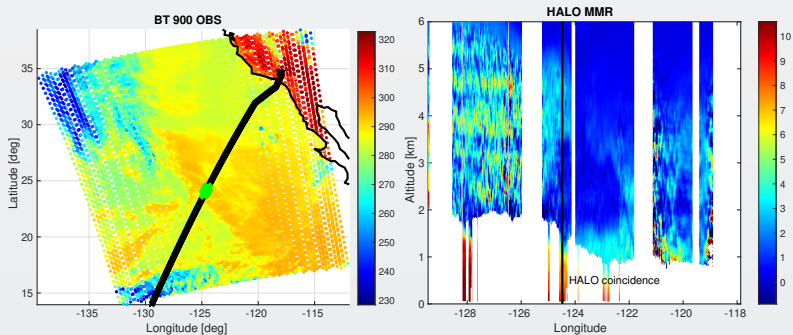
September 24-27, 2024

<sup>1</sup>UMBC JCET

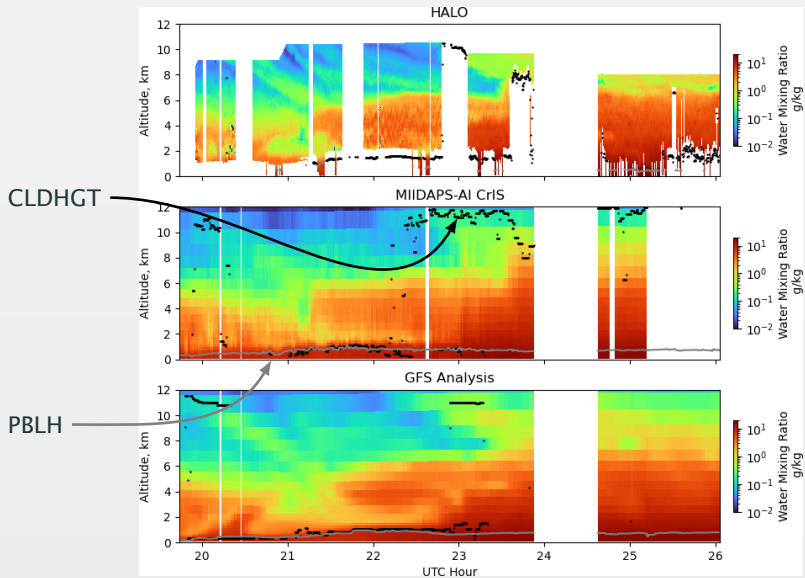
<sup>2</sup>Riverside technology

<sup>3</sup>Hampton University

Worked with  $d/dz$  (and  $d/dp$ !!!) RH, WVgg, Tvirtual, T  
Code finds max (or min) derivative closes to ground  
Black is HALO track, green is JPSS/HALO coincidence



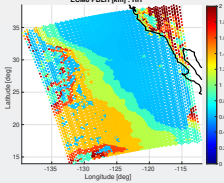
# HALO 2019/04/25 vs AI



# 2019/04/25 g214 : Comparing PBLH [km] for ECM and AI

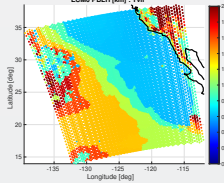
## d/dz RH

ECM0 PBLH [km] : RH



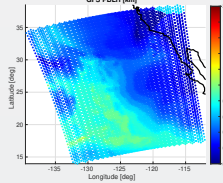
## d/dz Tpotential

ECM0 PBLH [km] : Tvir

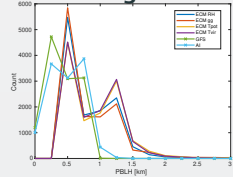


## GFS

GFS PBLH [km]

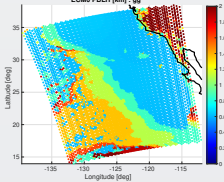


## Histogram



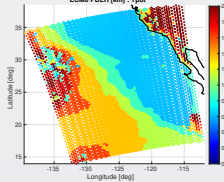
## d/dz g/g

ECM0 PBLH [km] : g



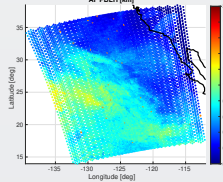
## d/dz Tvirtual

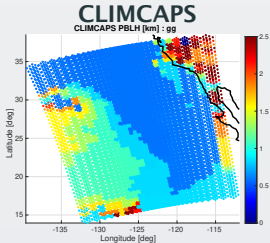
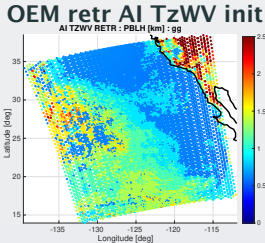
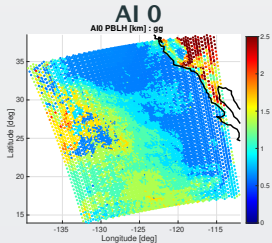
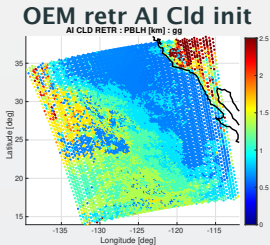
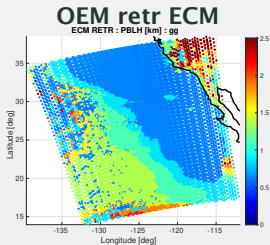
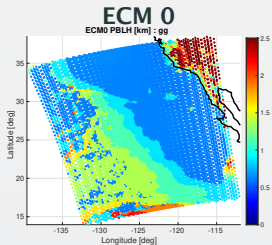
ECM0 PBLH [km] : Tpot



## AI 0

AI PBLH [km]





# AI Global PBL height retrieval at 15km IR sounder res - 2019/04/26

