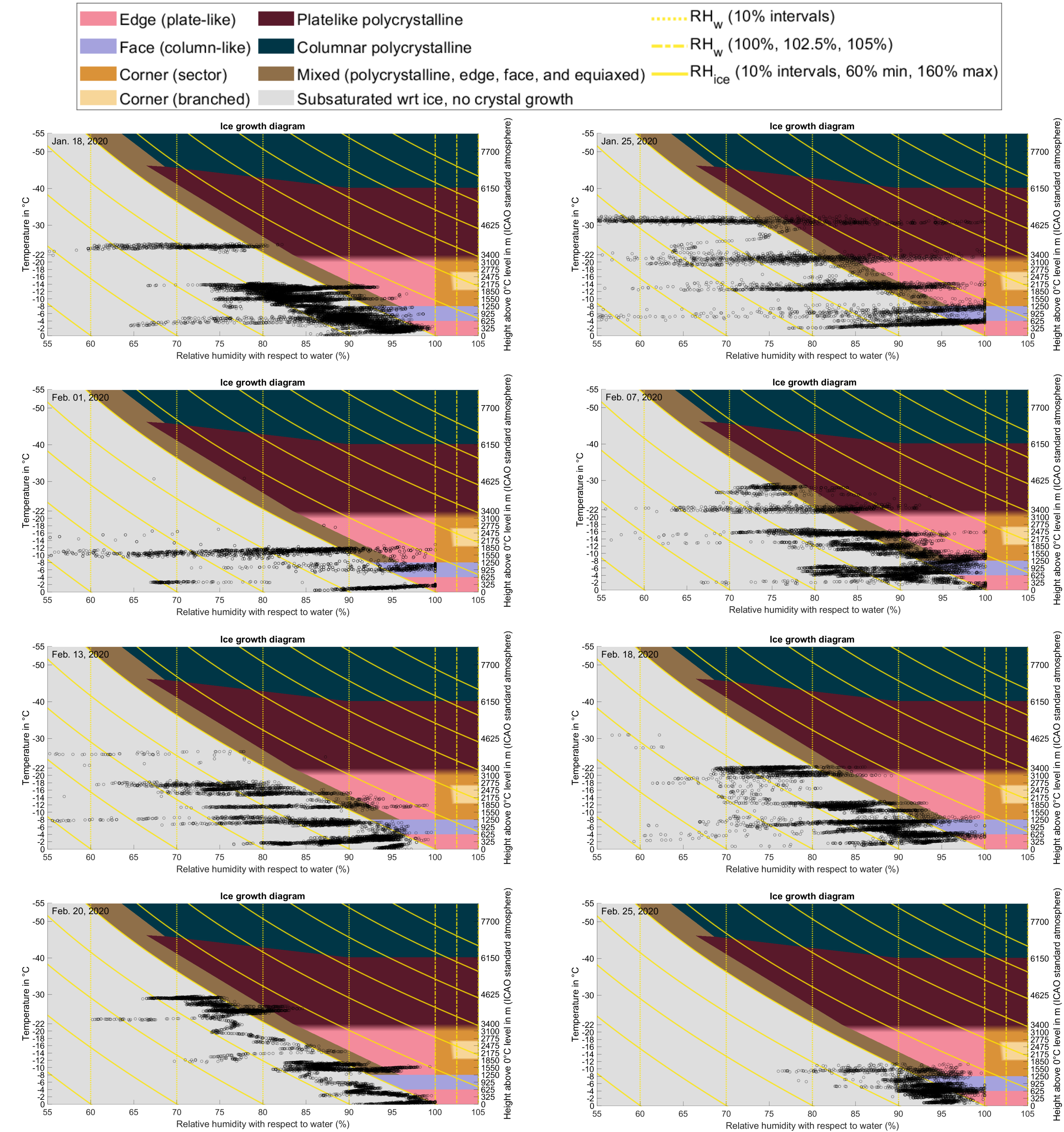


Ice Growth Environments and Snow Geometries Sampled During NASA IMPACTS January-February 2020

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We examine the context for PHIPS ice particle images obtained during the IMPACTS winter 2020 field season. For each flight with PHIPS data, the corresponding temperature and RH for PHIPS images are shown overlaid on a diagram that illustrates ice growth mode (left). The subset of flight legs with coordinated ER-2 and P-3 data (within 5 min and 3 km horizontal distance) and when the P-3 is near cloud top are highlighted at right. These data illustrate the myriad radar structures, RHice conditions, and the ice geometries associated with near cloud top conditions. Although temperatures and RHice are similar for a given flight leg, the set of ice particles usually have a variety of shapes and degree of riming sampled. These interim results imply complexity in time-integrated microphysics in this relatively simple portion of the winter storm cloud. A substantial portion of PHIPS samples were obtained at RHice < 95%, where ice mass shrinks (sublimates).



Joint air temperature, RHwater, and RHice environments corresponding to times of PHIPS images during each flight. Each circle represents a PHIPS image.

