1. Motivation
Most global modeling studies of dust acting as INPs assume uniform dust composition, whereas relatively few have taken dust mineralogy into consideration (Hoose et al., 2008; Atkinson et al., 2013; Vergara-Temprado et al., 2017). INPs have been calculated in latter studies, based on the assumption that the mineral fractions measured in wet-sieved soil samples directly determine the mineral fractions of the emitted dust aerosols.

In contrast, some recent modeling efforts of dust have considered different assumptions on the emitted size distribution of dust minerals, especially K-feldspar and other minerals (Atkinson et al., 2013). For all experiments, INP are calculated using two formulations of an active size parameterization, one for external mixing and the other one for internal mixing of K-feldspar with other minerals (Atkinson et al., 2013).

2. Experiments cont.
• AMF Mod. Feldspar: Same as AMF Baseline, but with feldspar size distribution like quartz size distribution to account for measurement uncertainty.

For all experiments, INP are calculated using two formulations of an active size parameterization, one for external mixing and the other one for internal mixing of K-feldspar with other minerals (Atkinson et al., 2013).

3. Results
3.1 Inferred INP fractions from AMF and SMF.

4. Conclusions
• We hypothesize that the main results will hold for other parameterizations as well.
• The results suggest that INP measurements are needed up to at least 10 μm diameter.