

Abstract Submitted
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Morphology of Atmospheric Particles¹ CLAUDIO MAZZOLENI,
Michigan Technological University — Atmospheric particles have highly diverse physical and chemical properties that determine the particles life-cycles, and impacts on climate and air quality. Key properties include size distribution, chemical composition, optical coefficients, and affinity for water that affect the particles interactions with clouds and radiation. These properties are often determined for a population of particles; however, under an electron microscope, no two particles look alike, each exhibiting a unique shape, with several components often mixed in different geometric configurations. These geometrical, structural, and topological properties the particle morphology affect how the particles behave in the atmosphere, including how efficiently they nucleate water and ice, and how they interact with solar radiation. In this talk, I will show examples of the morphology of individual particles, and I will discuss how the morphology evolves, and the impacts that morphology can have on the particles interactions in the atmosphere. I will present results from ambient and laboratory studies, including analyses of samples from a remote high-elevation station in the Azores, and from experiments performed in the turbulent cloud chamber facility at Michigan Technological University (the Pi-chamber).

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