Dust in active galactic nuclei

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From the formation of stars and planets to the evolution of galaxies, dust plays a crucial role in many astrophysical processes. Each field of astrophysics approaches the problem in a unique manner. In active galactic nuclei (AGN), the geometry and distribution of the component conformed by dust historically controls much of the observational properties of AGN classes. For decades, scientists studying AGN have focused on determining the geometry and distribution of dust within the first few tens of parsecs. This historical reason left behind important questions related to dust composition and grain size distribution. However, the harsh environment of AGN provides an ideal laboratory to understand dust processes such as coagulation or accretion. Recently, we discovered that both the chemical composition and dust grain sizes differ significantly from those of the ISM. During this talk, I will provide an overview of the extensive research conducted in the field of AGN, as well as recent and future prospects, thanks to high-quality MIR observations obtained with JWST.