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Effects of Dust at High Redshift Dusty Star-Forming Galaxies

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Despite its low contribution to the total mass of the interstellar medium, dust plays a crucial role in the evolution of galaxies, and it has the biggest impact on the shape of their total spectral energy distribution. Dust attenuates the stellar light by absorbing the short wavelength photons incoming from the newly-formed stars, and emits them thermally in the infrared. To account for dust attenuation in models, one should assume a dust attenuation law which describes how stellar emission is absorbed by dust. Despite the growing knowledge in the field of extragalactic astronomy, key questions remain unanswered: What dust attenuation law one should use at high redshift? What are the physical conditions on which dust attenuation curves depend?
In this talk, I will present the key physical processes that affect the curve of dust attenuation, in a large study of dusty star-forming galaxies from the early Universe until the present times.

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