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Dusty torus covering factor in AGNs: evolution, selection and calibration

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What dominates the quasars Spectral Energy Distribution at IR is dusty torus emission. It is described as the thermal reprocessor of the internal X-ray/UV accretion disc continuum.

Thus, internally, its emission strength should correlate with the strength of illuminating radiation and the amount of captured energy (due to covering factor). In the type 1 AGN, where the torus does not cross the line of sight, we also observe an apparent correlation between IR emission and opt-UV. To investigate its accuracy, we compare it with the proper SED fitting, where apparent photometry is addressed with a mixture of models.

This way we investigate the influence of contaminations from extinction, polar dust, starlight, and cold dust. I will cover the data quality issues, contaminant correlations, and prospects of calibration for simple photometric observables to infer the proper torus properties.

Finally, I will cover the possibility of using the quasars opt-IR relation in cosmology.

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