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Dependence of light scattering properties on porosity, size and composition of dust aggregates

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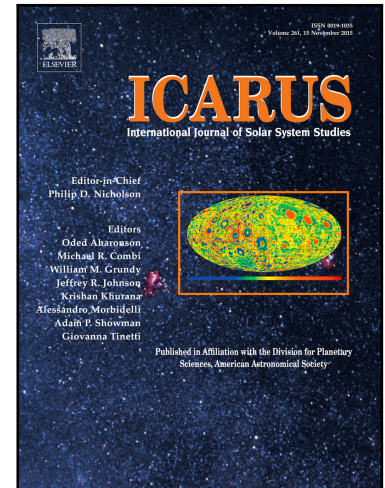
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Highlights

- The light scattering properties of moderately large dust aggregates ($0.7\mu\text{m} \lesssim R_c \lesssim 2.0\mu\text{m}$) having a wide range of porosity ($\mathcal{P} = 0.59$ to 0.98) is studied.
- Scattering parameters are strongly correlated with the porosity of the aggregates.
- The porosity of a material plays a key role in enhancing the negative branch of polarization.
- At the exact backscattering region, the anisotropies are found to be linearly correlated with the porosity of the aggregated structure.
- The difference parameter (which resembles anisotropy) is affected by the change in real part of the refractive index of the particles ($k \leq 0.1$) which in turn affects the negative polarization.

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