Albedo susceptibility from space and using VOCALS remotely-sensed datasets

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Satellite derivations of relative albedo susceptibility show a global maximum for the south-east Pacific. These likely encompass both the first and the second aerosol indirect effect as they contain both non-precipitating and precipitating clouds, yet such satellite-derived values are typically lower than those derived using surface-based remote sensing data on exclusively non-precipitating clouds. We use VOCALS airborne datasets, both remotely-sensed and in situ, to understand this discrepancy. The VOCALS datasets provide enough detail that the values can be understood at a process-level and include an assessment of the precipitation closure. Comparisons are made to satellite-derived values, with the impact of differences in scale, undetected precipitation (by the satellite), cloud heterogeneity, and the retrievals themselves investigated.