Radar fluxes of Draconid meteor outbursts

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The activity of the October Draconid meteor shower (009 DRA) varies strongly from year to year, with storms and outbursts at irregular intervals (Egal et al., 2019). Observations of the most recent outbursts (from 2011, 2012, and 2018) from four different specular meteor radars (one in North America and three in Europe) have been used to determine flux profiles of the shower in each year. There is a discrepancy between the peak flux calculated with the 29 MHz and 38 MHz systems of the Canadian Meteor Orbit Radar. The ratio of fluxes on the two frequencies is greater than that of any other major meteor shower, likely due to the unusual structure of the fragile Draconid meteors. Three-frequency data from the Canadian Meteor Orbit Radar is used to study the initial trail radius of the shower, in order to explain the discrepancy in the calculated flux between the 29 MHz and 38 MHz systems.

References:

Egal, A., Ehlert, S., Brown, P., Wiegert, P., Moticska, N., Campbell-Brown, M. D., Moorhead, A., Moser, D. (2019) Icaurs, in press.