

Preliminary Count Rate Maximisation of the Buckland Park Interferometric Meteor Radar

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Abstract

This paper describes techniques used to maximise the underdense meteor count rates obtained using the Buckland Park meteor radar (BPMR). A simple model allowing estimation of signal-to-noise ratio and effective pulse width for different sets of radar operating parameters is described. The model has been verified using the BPMR and used to determine optimal parameters which maximise meteor count rate. The results suggest that although pulse repetition frequencies (PRFs) of around 2 kHz allow meteor velocity and deceleration estimation, use of PRFs around 500 Hz maximise count rate and improve the quality of meteor echo height estimates.