RADIO PROPAGATION IN FIRE ENVIRONMENTS

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ABSTRACT

In this paper we discuss the representation of a bushfire environment as a radio propagation medium. Basic physical models are presented to model the refractive index and combustion induced plasmas. Combustion induced plasmas will particularly focus on chemi-ionisation and thermal ionisation for electron generation. Numerical schemes are introduced to evaluate radio propagation in long range calculations concurrently with cold plasma mediums. A case study fire is used to present some results to compare the effect of propagation phenomena.