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Stochastic approach of meteor-generated infrasounds CHRISTOPHE MILLET, CHRISTOPHE P. HAYNES, CEA, DAM, DIF, F-91297 Arpajon, France — In recent years, numerous bolide sources have been detected by the International Monitoring System infrasound arrays. In the present study, the meteorite fall near Carancas, Peru, on September 15, 2007 has been analyzed through the simulation of the emission and non-linear propagation of shocks. Given that the meteoric body shape and the way infrasounds are generated are generally not well known, the unknown parameters of bolides have been chosen to be random fields. By comparing our analytic and numeric results to recorded data, we aim to show that it might be entirely plausible that an N-wave type signal could have originated from the Carancas meteor scenario. It is shown that, given a random entry diameter, the uncertainty of the ground overpressure increases as the N-wave emission altitude decreases, as a result of bolide near-field effects, except for low-altitudes, where the uncertainties associated with the propagation medium may be dominant.

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