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Effect of atmospheric entry angle on uncertainties in the observed infrasound signal back-azimuths

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INTRODUCTION AND MAIN RESULTS

Infrasound signals from energetic moving events often deviate from predicted directions. Modeling reveals shallow-entry events (~10°) yield azimuth deviations up to ~46° within 1000 km, whereas steep entries (≥60°) show minimal deviations (<5° at 1000 km, <1° at 5000 km), redefining geolocation uncertainty and aiding planetary defense applications.