Title: Ray tracing as a tool for interpolating along slant paths through structured grids

Abstract: Several important observation operators for space weather applications require obtaining values along non-vertical ray paths through the model domain.
To obtain interpolated values for such operators, we have developed an efficient ray tracing algorithm that computes interpolated values where a specified ray intersects faces of model grid cells.
The algorithm is designed to support any structured (i.e. topologically rectangular) grid composed of hexahedral cells.
Our results show that this algorithm outperforms several alternatives in terms of both speed and accuracy when applied to a magnetic field aligned grid with nonuniform cell spacing.
We discuss the use of this interpolation algorithm within JEDI.