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60208-2730. *Pointwise Fourier Inversion.*

The spherical partial sums of the Fourier integral of the indicator function of a ball in three dimensions are divergent at the center of the ball, but convergent elsewhere. This prototype example (coined the "pinsky phenomenon") can be suitably generalized to Fourier integral expansions in Euclidean space, as well as to other non-compact rank one symmetric spaces: convergence happens if and only if the smoothness of the function is suitably related to the dimension of the space. We also discuss eigenfunction expansions on a geodesic ball in a compact rank one symmetric space, where the boundary conditions must also be considered, in addition to the internal smoothness of the function. (Received January 15, 2008)