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Truncation of Continuum Ambiguities in Phase-Shift Analysis

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Abstract. The continuum ambiguity in the determination of phase shifts from scattering data consists of a family of amplitudes which have in general an infinite number of partial waves. In practical computations, however, the partial wave series is necessarily truncated. We discuss the relation of the resulting (truncated) amplitudes to those representing the true continuum ambiguity. In particular, we show that each of the latter is approximated increasingly well, as the cut-off tends to infinity, uniformly inside an ellipse in the $\cos\theta$ plane.