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The wave equation in $AdS_5 \times Y^{p,q}$

We construct a global causal propagator for the wave equation in the $AdS_5 \times Y^{p,q}$ geometry, where AdS_5 denotes five-dimensional anti-de Sitter space and $Y^{p,q}$ is $S^2 \times S^3$ endowed with the family of Sasaki-Einstein metrics of cohomogeneity discovered by Gauntlett, Martelli, Sparks and Waldram. We will discuss some applications of this result to the AdS/CFT correspondence. This is joint work with Alberto Enciso (ICMAT, Madrid).