

Abstract Submitted  
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**Boosting spin-weighted spherical harmonics** MICHAEL BOYLE,  
Cornell University — Scalar spherical harmonics form the backbone of analysis of radiating fields in elementary physics. Extending such analyses to describe radiating tensor fields, gravitational-wave and CMB astronomers typically use “spin-weighted” spherical harmonics, which account more completely for the properties of those tensors under rotation. I will describe the appropriate framework for understanding these harmonics, as well as generalizations that will allow us to account for the properties under more general Lorentz transformations, and how this can lead to more efficient representations of the gravitational and electromagnetic fields.

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