

Regge-Wheeler-Zerilli formalism and metric reconstruction

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We present an algebraic procedure for reconstructing the metric perturbation from scalar quantities in the Regge-Wheeler-Zerilli formalism. Starting with the work of Wald, and more recently through advances by Green, Hollands, and Zimmerman and others, the Teukolsky metric reconstruction formalism has been written in an elegant four-dimensional language of operator adjoints, Hertz potentials, circularity relations, and corrector tensors. In contrast, metric reconstruction in the RWZ formalism has largely remained in a more opaque form. We discuss how RWZ metric reconstruction (in vacuum or nonvacuum) can be recast in the modern, four-dimensional, operator-based language. Collaborators: Adam Pound, Jonathan Thompson, Barry Wardell

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