

# Predictable projections of conformal stochastic integrals: an application to Hermite series and to Widder's representation

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In this article, we study predictable projections of stochastic integrals with respect to the conformal Brownian motion, extending the connection between powers of the conformal Brownian motion and the corresponding Hermite polynomials. As a consequence of this result, we then investigate the relation between analytic functions and  $L^p$ -convergent series of Hermite polynomials. Finally, our results are applied to Widder's representation for a class of Brownian martingales, retrieving a characterization for the moments of Widder's measure.

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