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Spectral calculus in function spaces and dispersive equations.

In this talk we consider spectral multiplier problem for Schrödinger operator with a critical potential. It is shown that the multiplier operator is bounded on L_p , Besov spaces and Triebel-Lizorkin spaces under the same sharp condition. We then derive Strichartz estimates in measuring spacetime regularity for the corresponding wave and Schrödinger equations. Our work is partially motivated by the standing wave problem for the quintic wave equation in R^3 .