Sharp Strichartz inequalities in low dimensions

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We give a short proof of the Strichartz inequality for the free Schrödinger evolution in dimension one and two. The Strichartz inequality bounds a certain spacetime L^p -norm of the solution in terms of the L^2 -norm of the initial conditions. Basically, the sharp inequality follows from the innocent looking fact that a projection operarator is bounded by the identity. As a byproduct, we also get a simple criterion for the extremizers, which implies that the extremizers are given by Gaussians. This is joint work with Vadim Zharnitsky, UIUC.