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**Brian Jongwon Choi\*** (choigh@bu.edu), 111 Sciarappa Street, Cambridge, MA 02141. *Global Well-posedness and Modified Strichartz Estimates for the Fourth Order Schrödinger Equation.*

We discuss the adiabatic limit of the Quantum Zakharov System on the real line and the 1-D torus for square-integrable initial data. On the real line, we show that solutions exhibit smoothing effects measured in the space-time Fourier restriction norm. The use of smoothing estimates proves to be more useful than Strichartz's estimates in this case. We show that as the quantum parameter goes to zero, we obtain the NLS limit when the time element is restricted to a compact interval. When the periodic boundary condition is imposed, we prove  $L^4$  and  $L^6$  versions of modified Strichartz estimates. These estimates have applications in showing that certain sub-critical nonlinear equations are well-posed at low regularities. (Received September 17, 2019)