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Phase diagram of disordered, time reversal invariant topological superconductors in two and three dimensions SUDIP CHAKRAVARTY , UCLA, PALLAB GOSWAMI, University of Maryland — In the absence of spin rotational invariance, time reversal symmetric topological superconducting states (belonging to the class DIII) can be realized in all three spatial dimensions. We construct the global phase diagrams of disordered, class DIII superconductors in two and three dimensions. In both spatial dimensions the Bogoliubov de Gennes quasiparticles can exhibit two topologically distinct localized (gapped) phases, in addition to a diffusive (gapless) phase that possesses metallic thermal conductivity. We also obtain exact localization length exponents and approximate crossover scaling functions for the relevant topological quantum phase transitions. For sufficiently weak disorder, we show that the direct topological transition between two gapped states is described by a four component, massless Dirac fermion with a dynamical exponent $z = 1$ and a correlation/localization length exponent $\nu_M = 1$. For stronger disorder, we demonstrate how two topologically distinct localized states and the delocalized diffusive phase meet at a line of disorder controlled fixed points, which governs the nature of the localization-delocalization transitions. We show the existence of a universal localization length exponent $\nu_M = 2/d$ and a nonuniversal dynamical exponent for the localizati

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