Making an Analogy between Forming a Josephson Junction and the Use of Wave Functionals to Form Soliton- Anti Soliton Pairs in Both Biological and Condensed Matter Physics ANDREW BECKWITH, APS/ Fermi contractor — Our paper generalizes techniques initially explicitly developed for CDW applications only with respect to what is needed for multi dimensional instantons forming in complex condensed matter and/or bio physics applications. This involves necessary conditions for formulation of a soliton- anti soliton pair, assuming a minimum distance between charge centers, and discusses the prior density wave physics example as to why a Pierels gap term is added to the tilted washboard potential for insuring the formation of scalar potential fields. We state that much the same methodology is needed for higher dimensional condensed matter systems and bio physics, with strict conditions stated as to necessary potential terms needed to form a Josephson junction interpretation as to how to form wave functionals with necessary Gaussian character which can model instanton physics via a process analogous to Pierels gap and Brillouin zone boundary physics.

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