Abstract Submitted
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Boundaries in a bosonized language NAYANA SHAH, CARLOS BOLECH, University of Cincinnati — We have been reexamining the Bosonization-Debosonization (BdB) procedure for systems including certain types of localized features, junctions and impurities being the two most conspicuous examples. We will present the latest developments in our attempts to assure BdB-based calculations are consistent. Our initial focus on the case of a tunneling junction out of equilibrium showed that the conventional approach to BdB gives results that are not consistent with the exact solution of the problem, even at the qualitative level, and highlighted inconsistencies that can adversely affect results in all types of calculations. We subsequently introduced a procedure that we developed to resolve these problems and argued that the framework should be widely applicable [1]. We substantiated the claim by applying the updated procedure to the two-lead Kondo problem [2], which besides being a key theoretical prototype of a strongly correlated system away from equilibrium, is also of immediate experimental relevance in many ways. Follow up calculations are helping to contextually demarcate the need for assuring consistency when doing calculations in bosonized problems. // [1] N. Shah and C. J. Bolech, Phys. Rev. B 93, 085440 (2016); [2] C. J. Bolech and N. Shah, Phys. Rev. B 93, 085440 (2016).

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