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Scale Invariance in 2D BCS-BEC Crossover¹ RAJDEEP SENSARMA, Tata Institute of Fundamental Research, EDWARD TAYLOR, McMaster University, MOHIT RANDERIA, The Ohio State University — In 2D BCS-BEC crossover, the frequency of the breathing mode in a harmonic trap, as well as the lower edge of the radio frequency spectroscopy response, show remarkable scale-invariance throughout the crossover regime, i.e. they are independent of the coupling constant. Using functional integral methods, we study the behaviour of these quantities in the 2D BCS-BEC crossover and comment on the possible reasons for this scale independence.

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