

TWO-DIMENSIONAL QUANTUM FIELD MODELS

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Often, two dimensional toy models display, in a gentler setting, many salient aspects of QFT. In this talk I will discuss some concrete (i.e. constructive) two dimensional cases, the Thirring model, the Thirring-Wess model and the 2-colors Thirring model, to illustrate some celebrated features of QFT: the anomalous exponents of the Schwinger functions; the exact solvability; the Adler-Bell-Jackiw anomalies, the Adler-Bardeen non-renormalization theorem; the Bosonization of the fermion currents into the sine-Gordon model. Besides (time permitting) I will give a glimpse of the crucial role that these models play in the study of two dimensional, critical, probabilistic systems.

Keywords: Constructive quantum field theory, anomalies, critical statistical mechanics.