

Sergio Simonella. *Borel summability of ϕ_4^4 planar theory via multiscale analysis.* We discuss the issue of Borel summability in the framework of multiscale analysis and renormalization group, by providing a new proof of Borel summability for the planar part of the ϕ_4^4 Euclidean massive theory. Our proof consists essentially in a rigorous study of the beta function of an asymptotically free field theory, and in a careful control of the resummations of the divergent power series defining the model. Over the years there has been increasing interest in planar theories. Moreover, the techniques that we use have already been proved effective in the analysis of various models of condensed matter and constructive quantum field theory. Therefore, we take the ϕ_4^4 planar theory as a toy model for future applications.