

Volker Bach: Renormalization Group based on the Smooth Feshbach-Schur Map

Friday, May 8, 2026 9:00 AM (1 hour)

About three decades ago, a renormalization transformation based on the Feshbach–Schur Map was developed and applied to spectral problems in nonrelativistic QED. Among other things, the existence of ground states and resonances of these systems, and their computation to arbitrary accuracy by a convergent renormalization scheme was established. Starting from these results, further developments of the method and their applications, such as a smooth version of the original RG transformation, a continuous version of the RG transformation, and applications to singular models are reviewed in the talk. Furthermore, recent results in this context obtained in collaboration with M. Ballesteros, J. Geisler, and S. Karimi are presented.