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How non-perturbative physics can resurge from perturbation theory

Saskia Demulder
Vrije Universiteit Brussel

Important features of physical systems; non-perturbative phenomena, cannot be captured by the most widely used tool in physics: perturbation theory. Perturbation theory is indeed inherently not complete answer. In QCD for example, the growing number of diagrams implies that perturbation theory does not give a finite result to physical quantities or cannot explain the appearance of a mass scale.

Quiet surprisingly there is growing evidence that non-perturbative effects are actually captured by perturbation theory. This talk will introduce the audience to how non-perturbative effects can resurge from perturbative data. This technique of resurgence can be used to investigate the non-perturbative sector of exactly solvable models in two dimensional Quantum Field Theory.