

Semiclassical Energy Density of Sine-Gordon Solitons

Monday, 27 March 2023 11:45 (30 minutes)

Classical solutions like Solitons play an important role in quantum field theory, high energy physics and cosmology, such it is worthwhile to investigate them in more detail. I will summarize in this talk the results of my master thesis, in which I investigated the semiclassical energy density of solitons in the 1 plus 1 dimensional Sine-Gordon model. In the first part of the talk, I will briefly recapitulate the key methods I used, such as Hadamard point-split renormalization. I will also comment on a subtlety concerning the stress tensor for the 1 plus 1 dimensional scalar field case. The second part follows then with a summary of the corresponding results I gathered for the semiclassical energy density.

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