

Solitons and instantons II.

1. The general principles of soliton quantization
2. The quantization of the kink solution the quantum kink and its excitations.
3. The kink mass and its renormalization
4. The ‘physical’ treatment of the translation mode
5. Axiomatic framework the precise role of the classical kink solution.
6. Equal time commutators in the axiomatic framework
7. Introducing collective coordinates in scalar field theories
8. Quantization of collective coordinates
9. The dilute instanton gas approximation quantum mechanics with periodic potential, particle moving on a circle.
10. The treatment of null modes in functional integrals
11. The topological vacua of the 1 + 1 dim. Abelian Higgs model
12. Vacuum tunneling in the 1 + 1 dim. Abelian Higgs model

Suggested reading

R. Rajaraman: Solitons and Instantons (North Holland, 1982)

Palla László