

Solitons and instantons in quantum field theory

Lecturer

Michel TYTGAT (Coordinator)

Course mnemonic

PHYS-F478

ECTS credits

5 credits

Language(s) of instruction

English and French

Course period

Second term

Course content

Heat kernel and zeta function regularization. Black body radiation. Chiral anomalies.

Objectives (and/or specific learning outcomes)

Advanced chapters in quantum field theory.

Teaching method and learning activities

Black board course.

References, bibliography and recommended reading

[15] S. W. Hawking, "Zeta function regularization of path integrals in curved spacetime," Communications in Mathematical Physics

55 (June, 1977) 133–148. [16] R. A. Bertlmann, Anomalies in quantum field theory, vol. 91 of International series of monographs on physics. Oxford, UK : Clarendon, 1996. [17] S. Rosenberg, The Laplacian on a Riemannian Manifold : An Introduction to Analysis on Manifolds, vol. 31 of London Mathematical Society Student Texts. Cambridge University Press, 1997. [18] R. Balian, du microscopique au macroscopique, vol. 2. Ecole polytechnique, ellipses, 1982. [19] H. Callen, Thermodynamics and an introduction to thermostatistics. John Wiley & Sons, second ed., 1985.

Other information

Contact(s)

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Evaluation method(s)

Oral examination

Evaluation method(s) (additional information)

Oral examination.

Programmes

Programmes proposing this course at the faculty of Sciences

MA-PHYS | **Master in Physics** | finalité Research/unit 1 and finalité Teaching/unit 1