

NPQCD

NONPERTURBATIVE PROPERTIES OF QCD

Preventivi 2022 Pisa, 29 Giugno 2021

Proprietà non-perturbative della QCD: confinamento del colore, simmetrie chirali, proprietà topologiche, diagramma di fase della QCD, QCD in campi esterni, teorie efficaci, scattering adrone-adrone, proprietà dell'assione, etc.

Simulazioni numeriche su reticolo: sviluppo di codici su architetture parallele standard ed ibride (CPU+GPU o altro), algoritmi per "Quantum Computing".

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Pubblicazioni 2020–2021

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2. C. Bonati, M. Cardinali, M. D’Elia, F. Mazziotti, “[Theta-dependence and center symmetry in Yang-Mills theories](#)”, Phys. Rev. D 101, 034508 (2020).
3. C. Bonati, M. Cardinali, M. D’Elia, M. Giordano, F. Mazziotti, “[Reconfinement, localization, and thermal monopoles in \$SU\(3\)\$ trace-deformed Yang-Mills theory](#)”, Phys. Rev. D 103, 034506 (2021).
4. C. Bonanno, C. Bonati, M. D’Elia, “[Large- \$N\$ \$SU\(N\)\$ Yang-Mills theories with milder topological freezing](#)”, JHEP 03 (2021) 111.
5. M. Berni, C. Bonanno, M. D’Elia, “[Theta-dependence in the small- \$N\$ limit of 2d CPN-1 models](#)”, Phys. Rev. D 102, 114519 (2020).
6. A. Candido, G. Clemente, M. D’Elia, F. Rottoli, “[Compact gauge fields on Causal Dynamical Triangulations: a 2D case study](#)”, JHEP 04 (2021) 184.
7. G. Clemente, M. Cardinali, C. Bonati, E. Calore, L. Cosmai, M. D’Elia, A. Gabbana, D. Rossini, F.S. Schifano, R. Tripicciono, D. Vadacchino, “[Quantum computation of thermal averages in the presence of a sign problem](#)”, Phys. Rev. D 101, 074510 (2020).
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10. C. Bonati, A. Pelissetto, E. Vicari, **"Universal low-temperature behavior of two-dimensional lattice scalar chromodynamics"**, Phys. Rev. D 101, 054503 (2020).
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13. J.J. Alonso, B. Alles, V. Russier, **"Magnetic ordering of random dense packings of freely rotating dipoles"**, Phys. Rev. B 102, 184423 (2020).
14. C. Alexandrou, A. Athenodorou, C. Chrysostomou, S. Paul, **"The critical temperature of the 2D-Ising model through deep learning autoencoders"**, Eur. Phys. J. B 93, 226 (2020).
15. A. Athenodorou, M. Teper, **"The glueball spectrum of SU(3) gauge theory in 3+1 dimensions"**, J. High Energy Phys. 2020, 172 (2020).