



**COLLOQUIA DI DOTTORATO, A.A. 2025/2026**

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A101, Dipartimento di Fisica  
**Giovedì 23 aprile 2026 ore 16:00**

***Studying the microscopic properties of  
the Quark Gluon Plasma at colliders***

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In heavy-ion collisions at ultra-relativistic energies, nuclear matter is subject to extreme conditions of temperature and density. A crossover happens, and nuclear matter transits into an almost perfect liquid that exhibits properties similar to those of a quantum fluid, the Quark Gluon Plasma (QGP). In a manner similar to the Rutherford experiment, where alpha particles were short-range probes of the atom, revealing the existence of the nucleus, we use energetic quarks and gluons as high-resolution probes of the QGP to study its microscopic structure. I will discuss the status and main open questions of the field.