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## Collision Dynamics near the Critical Point at Strong Coupling

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We present the first out-of-equilibrium analysis of relativistic collision dynamics in the vicinity of a critical point. Using holography, we study the collision of ultra-relativistic lumps of energy in a strongly coupled gauge theory with a non-trivial phase diagram which includes a critical point. Choosing collision energies in the vicinity of the critical point, we explore the distribution of matter in the aftermath of the collision. For those energies we observe that independently of the nature of the transition, almost all the energy of the projectiles ends up in a quasi-static, slowly evolving blob of energy. We also observe that this distribution is well described by hydrodynamics, provided specific second order coefficients are taken into account. At least at the level of energy distributions, we observe no distinction in the collision dynamics across the critical point, first order or cross-over transitions.

### Content type

Theory

### Collaboration

### Centralised submission by Collaboration

Presenter name already specified

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