

FAKULTÄT für PHYSIK  
LUDWIG-MAXIMILIANS-UNIVERSITÄT  
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT  
TECHNISCHE UNIVERSITÄT MÜNCHEN  
MÜNCHEN/GARCHING

## MLL-KOLLOQUIUM

Donnerstag, 12.01.2012, 16<sup>15</sup> Uhr

Hörsaal der LMU in Garching, Am Coulombwall 1  
Treffen zum gemeinsamen Kaffee 16 Uhr

**Prof. Johann Rafelski**

**University of Arizona, Tucson/USA**

### Critical Acceleration

In collisions of ultra-intense laser pulses with relativistic electrons as well as in ultra-relativistic heavy ion collisions at RHIC and at LHC, it is possible to probe the critical acceleration  $a = mc^3/\hbar$ . The behavior of a particle undergoing critical acceleration challenges the limits of the current understanding of basic interactions: little is known about this physics frontier; both classical and quantum physics will need further development in order to be able to address this newly accessible area of physics. The problem of critical acceleration is closely connected to strong field particle production, Mach's Principle and Unruh–Hawking radiation.

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