Born-Infeldization of gravity and novel inflationary scenarios

Jose Beltran Jimenez Centre de Physique Théorique Aix Marseille University France

In order to regularize the energy of point-like charged particles, Born and Infeld introduced a modification of the Maxwell Lagrangian that naturally imposes an upper bound on electromagnetic fields. Similar ideas can be applied to gravity to resolve the GR singularities. I will discuss a class of theories based on this scheme and present a scenario where inflation can be supported by a dust component.