PHYSIKALISCHES KOLLOQUIUM

AM 06. FEBRUAR 2023 UM 17 UHR C.T.

IM GROßEN HÖRSAAL

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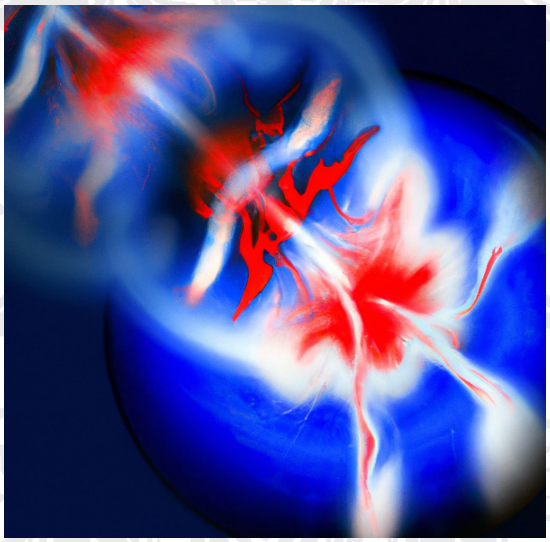

WHAT IS FRICTION?

A BRIEF AND BIASED PRIMER

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Friction is an ubiquitous phenomenon we encounter every day. A mundane effect at first glance, the term “friction” covers a surprising wide variety of micro- and macroscopic phenomena, including such exotic members as friction between single molecules or anisotropic friction within biopolymers. Moreover, the reduction of friction and associated wear is of large importance in a wide range of technological applications.
In this lecture, I will detail on the origin of a selected set of friction types, and outline how to calculate quantitative parameters describing friction. Furthermore, I will discuss how friction emerges in many-body dynamics as well as its relation to fluctuations. Last, I will demonstrate that friction is not necessarily a nuisance, but can become a key to technical applications, e.g., in friction welding or rocket science.