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Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction -- Theoretical Background -- Dynamical Friction in a Relativistic Plasma -- Transport Processes in a Relativistic Plasma -- Numerical Simulations of High Temperature Plasmas -- An Experiment to Observe the Breit-Wheeler Process -- Conclusions.
Sommario/riassunto	This thesis makes two important contributions to plasma physics. The first is the extension of the seminal theoretical works of Spitzer and Braginskii, which describe the basics of particle interactions in plasma, to relativistic systems. Relativistic plasmas have long been studied in high-energy astrophysics and are becoming increasingly attainable in the laboratory. The second is the design of a new class of photon–photon collider, which is the first capable of detecting the Breit–Wheeler process. Though it offers the simplest way for light to be converted into matter, the process has never been detected in the 80 years since its theoretical prediction. The experimental scheme proposed here exploits the radiation used in inertial confinement fusion experiments and could in principle be implemented in one of several current-

generation facilities.

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