

Characteristics of Magnetic Springs for the Guidance of Superconducting Maglev Vehicles

Takenori YONEZU Ken WATANABE
Erimitsu SUZUKI Takashi SASAKAWA

The lateral and rolling components of the magnetic springs of superconducting Maglev vehicles are strongly coupled, and their characteristics are barometers to decide the take-off velocity of the vehicle. In order to design the Maglev vehicle effectively, it is important to understand the principles to be applied to determine the spring specifications with respect to the design parameters: the electrical gap and magnetomotive force of the superconducting magnet. In this paper, a study by computer simulations on the effect of changing the design parameters is described, referring to the principles of the electrodynamic suspension and the vehicle dynamics of the Maglev vehicles.