R008-17
C 会場 ： 11/27　AM2（11:05-12:35）
11:05〜11:20:00

#梅田 隆行 [1)]
(1 北大基盤センター

Loading of relativistic Maxwellian-type distribution revisited

#Takayuki Umeda[1)]
(1Information Initiative Center, Hokkaido University

A numerical generator for random variates from a relativistic Maxwellian-type distribution is an important tool in particle-in-cell simulations and test-particle calculations. Conventionally, a relativistic Maxwellian momentum distribution is widely assumed as an initial distribution, which is known as the Maxwell-Juttner distribution. For generating random variates from the Maxwell-Juttner distribution, rejection methods are adopted. In the present study, generation of random variates from a relativistic Maxwellian energy distribution is examined as an alternative to the Maxwell-Juttner distribution. A simple numerical procedure for generating random variates from an energy distribution based on the inverse transform sampling is presented, which adopts the same procedure as a non-relativistic energy distribution. Then, the coordinate transform from the energy space to the momentum vector space is made.