

1083-35-39

Kaijun Zhang* (zhangkj201@nenu.edu.cn), School of Mathematics and Statistics, Northeast Normal University, Changchun, Jilin 130024, Peoples Rep of China, **La-su Mai**, School of Mathematics and Statistics, Northeast Normal University, Changchun, Jilin 130024, Peoples Rep of China, and **Jingyu Li**, School of Mathematics and Statistics, Northeast Normal University, Changchun, Jilin 130024, Peoples Rep of China. .

We are concerned with the mathematical analysis of the relativistic Euler-Poisson equations in one dimensional case. The existence and uniqueness of the related smooth steady state solutions are proved. The non-relativistic limit and zero-relaxation limit of the model as well as their convergence rates are also obtained. (Received August 05, 2012)