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## Influence of ions on relativistic double layers radiation in astrophysical plasmas

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### Abstract

As double layers (DLs) are one of the most important acceleration mechanisms in space as well as in laboratory plasmas, they are studied from different points of view. In this paper, the emitted power and energy radiated from charged particles, accelerated in relativistic cosmic DLs are investigated. The effect of the presence of additional ions in a multi-species plasma, as a real example of astrophysical plasma, is also investigated. Considering the acceleration role of DLs, radiations from accelerated charged particles could be seen as a loss mechanism. These radiations are influenced directly by the additional ion species as well as their relative densities.

**Keywords:** double layer, electromagnetic radiation, astrophysical plasma

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