

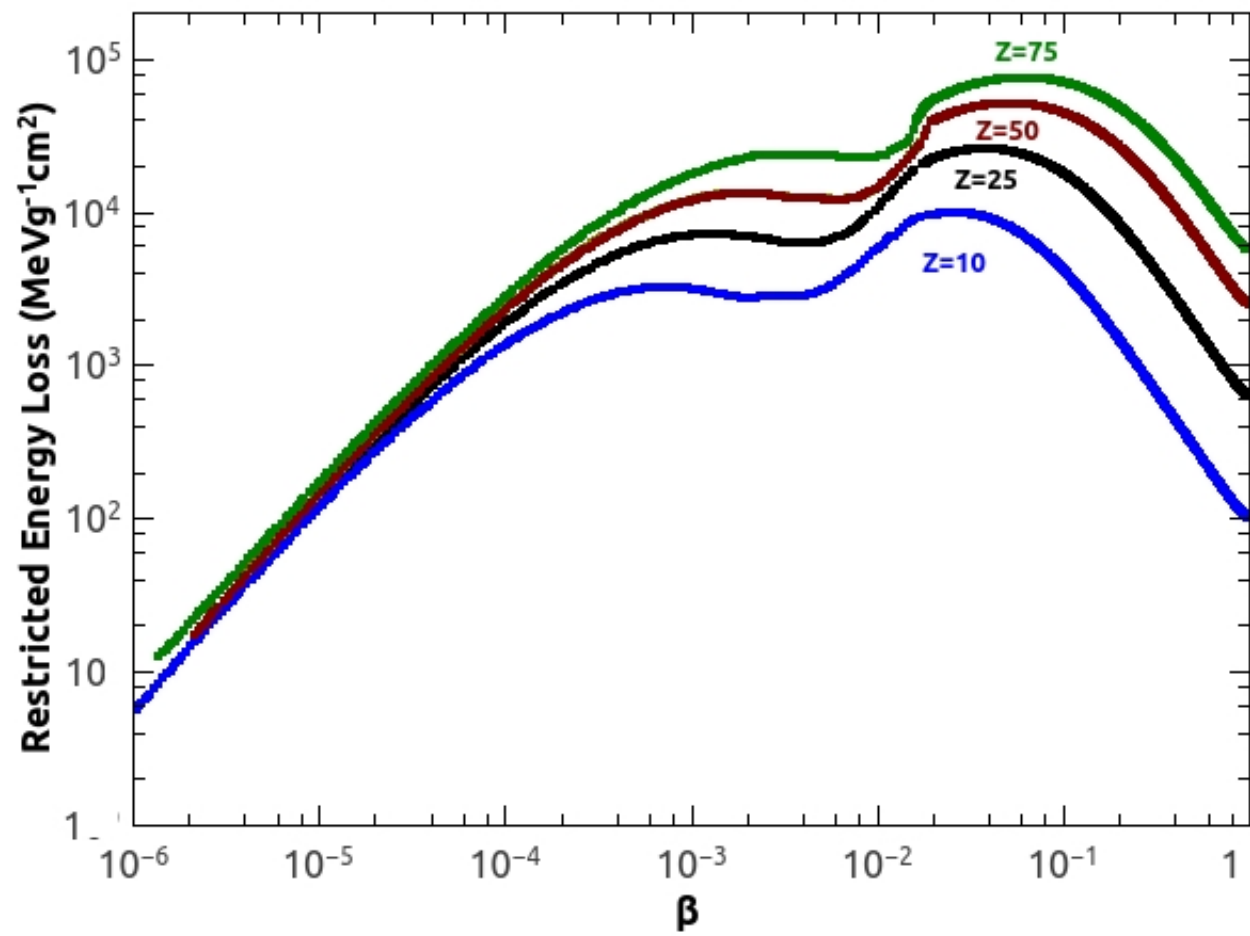
## Few notes on HECO energy loss

- For  $\beta < 0,01$   $REL = E_{Loss}$  and we can use Ziegler et al. (SRIM)
- For  $\beta$  in the range 0,01 and 0,05 there is no satisfactory formula for the Energy loss (Bethe-Block not valid) and nor for REL. So, we generally use approximation/interpolation: Ziegler, for the energy Loss, other for REL.
- For  $\beta > 0,05$  REL computed from PDG

=> This is true as long as  $Z \leq 92$ ,  
For larger charges it is no more possible to use Ziegler et al. (SRIM) for low velocities; but formula from PDG can always be used.

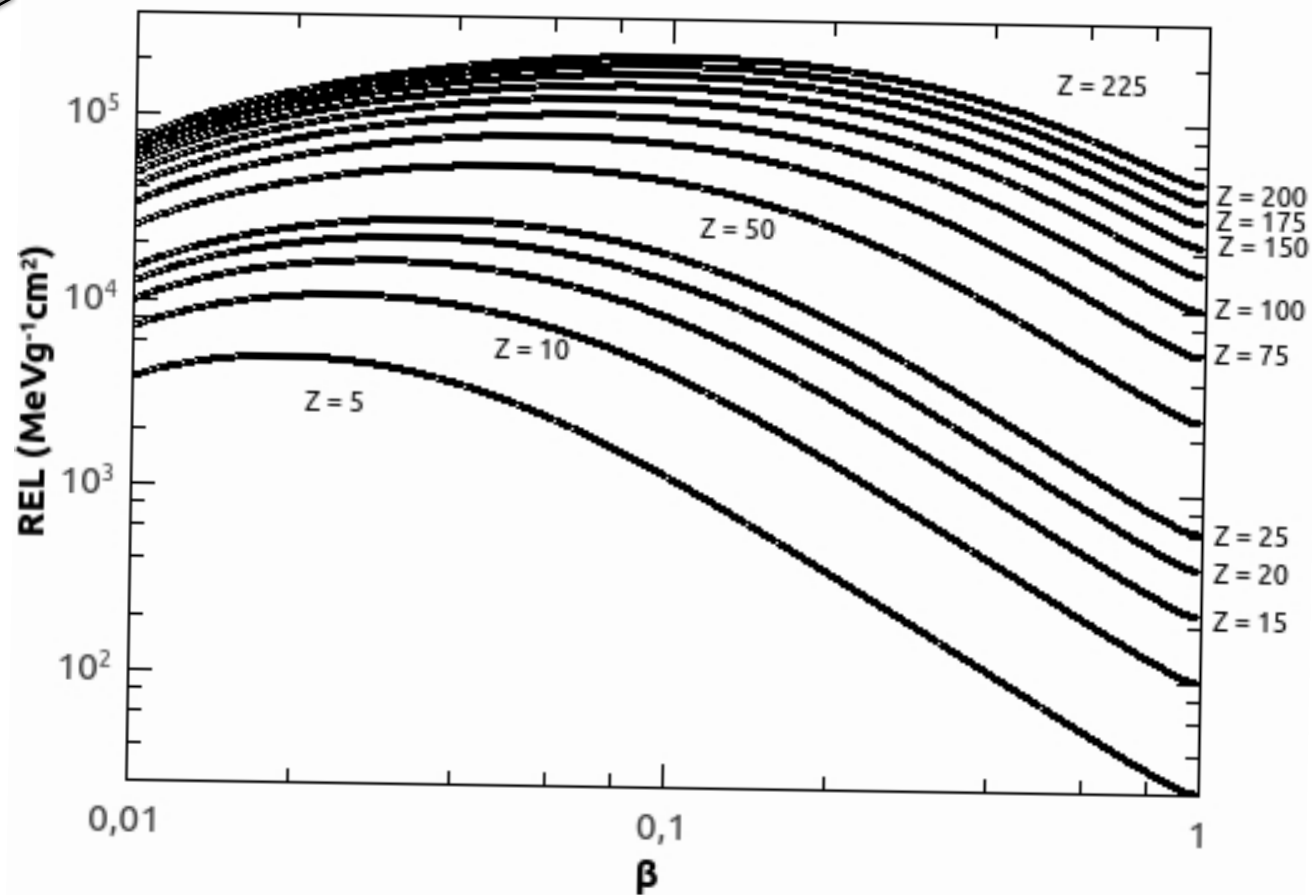
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## Restricted Energy Loss

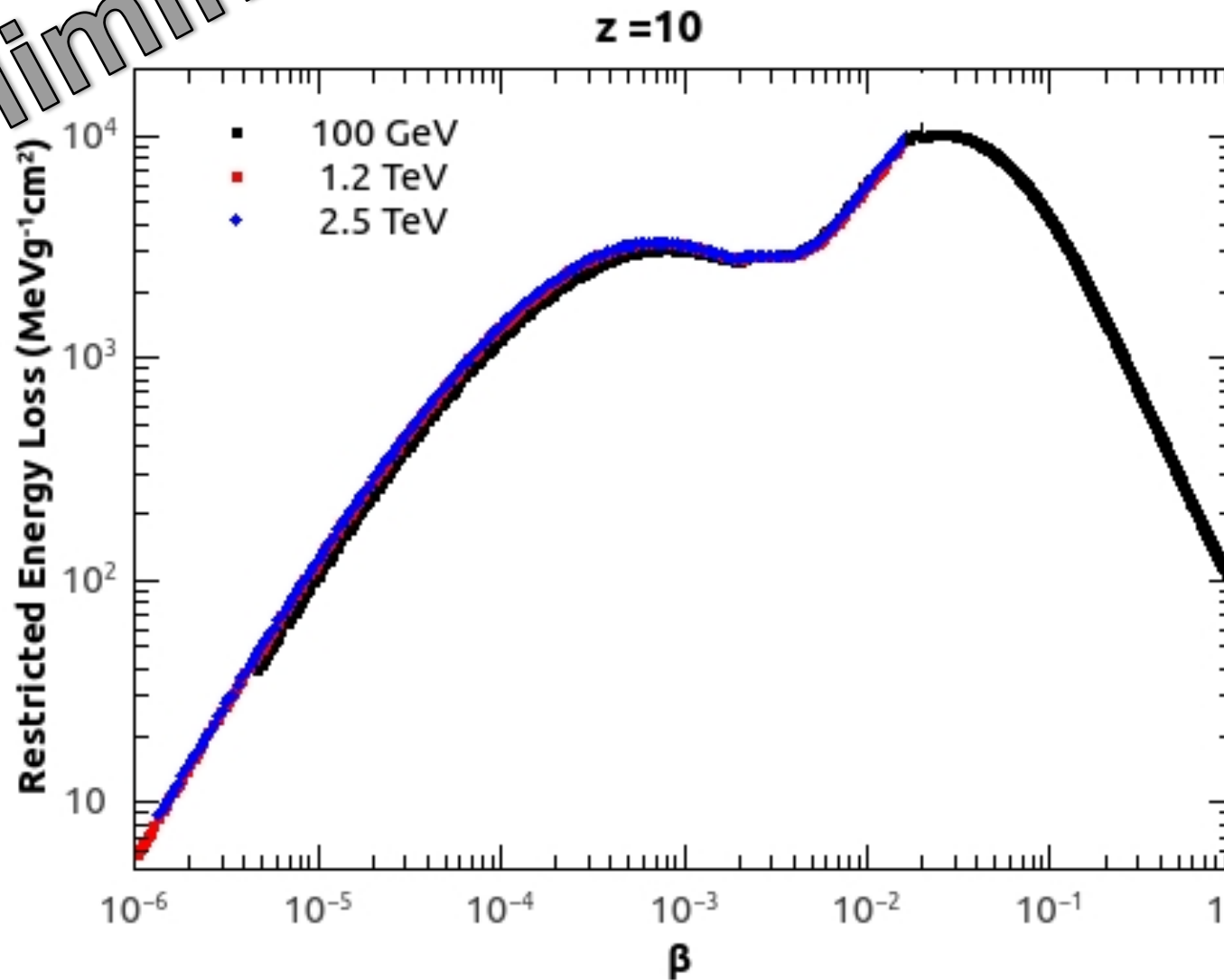


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## Restricted Energy Loss at high velocity



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**Small difference at low beta for different masses**