

# Recent results on the ionization problem

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We show that for atoms, described either in Thomas-Fermi-Dirac-von Weizsaecker theory or in Mueller theory, the number of electrons bound by a nucleus of charge  $Z$  is at most  $Z + C$  for some constant  $C$  independent of  $Z$ . The novelty of the proof is a bound on the number of electrons far away from the nucleus, which uses a new strategy inspired by recent work on the liquid drop model.

*The talk is based on joint work with P. T. Nam and H. Van Den Bosch.*

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