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Electron Attachment in Low-Energy Electron Elastic Collisions with Au and Pt Atoms: Identification of Excited Anions A.Z. MSEZANE, Clark Atlanta University, A. EURE, Winston-Salem State University, Z. FELFLI, Clark Atlanta University, D. SOKOLOVSKI, Queen's University of Belfast, UK — The recent Regge-pole methodology has been benchmarked [1] on the accurately measured binding energies of the excited Ge^- and Sn^- anions [2] through the binding energies (BEs) extracted from the Regge-pole calculated elastic total cross sections (TCSs). Here the methodology is applied together with a Thomas-Fermi type potential that incorporates the vital core polarization interaction to investigate the possibility of forming excited Au^- and Pt^- anions in low-energy electron elastic collisions with Au and Pt atoms. From the positions of the characteristic extremely narrow resonances in the total cross sections, we extract the binding energies of the excited Au^- and Pt^- anions formed as Regge resonances during the collisions. The angular life of the complexes thus formed is used to differentiate the stable excited bound states of the anions from the shape resonances [3]. The BEs for the excited Au^- and Pt^- anions are found to be 0.475eVand 0.543eV, respectively, challenging both theory and experiment to verify. [1] A. Msezane *et al*, Phys. Rev. A, Submitted (2009) [2] M. Scheer *et al*, Phys. Rev. A **58**, 2844 (1998) [3] Z. Felfli *et al*, Phys. Rev. A **79**, 012714 (2009)

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