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Deriving the Ionic Electrostatic Potential of Metallic Nanowires JOSHUA REINHEIMER, JEROME BUERKI, California State University Sacramento — Using the Nanoscale Free Electron Model (NFEM), the electrostatic potential of metallic ionic nanowires is derived. Considering a hard wall potential to confine electrons in the wire, wires of a cylindrical cross section are considered first and their ionic electrostatic potential is calculated. After analyzing the properties of the cylindrical case, the same derivations and calculations will be completed to consider wires of an arbitrary elliptical cross section. Due to the intractable nature of the electrostatic potential functions, numerical methods are employed to help find the potential values

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