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Semiconductor Dielectric Function Modeling Using the Tanguy Analytical Expression for the Hulthen Exciton NAVEEN SENTHIL, Basis Peoria, JOSE MENENDEZ, Arizona State University — Tanguy's analytical expression¹ for the complex dielectric function associated with a Hulthen exciton in a semiconductor is used to obtain second derivatives that can be used for fast fits of spectroscopic ellipsometry data. Since the Hulthen potential provides an excellent description of a screened exciton, the expressions obtained are ideally suited to investigate the possible excitonic origin of the *ad hoc* phase factors that are often needed to match dielectric function theory with ellipsometry data. A detailed analysis is presented with applications to elemental semiconductors such as Ge.

¹C. Tanguy, **Phy. Rev. B** 60, 10660 (1999).

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