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Asymptotic Expressions for the Parameters Describing Low Pressure Electronegative Plasmas RAOUL FRANKLIN, The Open University — Experimentalists working in plasma processing need relatively simple expressions characterizing their plasmas. To that end we have revisited the Tables given by Franklin and Snell (1992) to obtain asymptotic i.e. algebraic expressions for the values of potential, ion speed and densities at the 'plasma edge' and the eigenvalue in terms of the parameters $\varepsilon = \mathrm{Te/Tn}$ and $\alpha = \mathrm{nn0/ne0}$, for the case where a single negative ion species is dominant. Given the geometry of most plasma processing systems, there is more interest in plane geometry, and so we have concentrated on that, but we have found analogous expressions for cylindrical geometry. Over almost all of the parameter space, we have obtained values that approximate well to the accurate computed solutions. Franklin R. N. and Snell J. (1992) *J Phys D : Appl Phys* **25** 435-7

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