

# On the Darwin-Howie-Whelan equations for the scattering of fast electrons described by the Schrödinger equation

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The Darwin-Howie-Whelan (DHW) equations are widely used for the numerical simulation of transmission electron microscopy (TEM) images. They describe the propagation of the electron beam through crystalline solids and are formally stated as a system of infinitely many beam amplitudes  $\psi_g$ . For the numerical simulation however only a finite set of beams is used, e.g. the two-beams approximation. In this talk we will address the accuracy of the approximation of this infinite system by suitable finite-dimensional ones.