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Fourier Spectrum Representation of Vector Multipole Field and its Application in Wave Scattering in Elastic Half-Space

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This paper presents the stress concentration of a cavity embedded in elastic half space and impinged by two-sets of standing Goodier-Bishop incident waves which can simulate a uniform tension surrounding. The scattering field is expressed as Fourier spectrum representation. This representation by Cartesian coordinates can make the construction of the reflective waves easily. Applying Betti's third identity develops the transition matrix for elastic half-space. This matrix presents the salient features of the interaction between the flat surface and the scatter, and then is applied for the problem undertaken. The numerical results are presented and discussed.

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