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Modelling Asymmetric Magnetic Recording Heads with an Underlayer Using Superposition

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Abstract : This paper analyses and calculates the head fields of asymmetrical 2D magnetic recording heads when the soft-underlayer is present using the appropriate Green's function to derive the surface potential/field by utilising the surface potential for asymmetrical head without underlayer. The results follow closely the corners, while the gap region shows a linear behaviour for d/g < 0.5 compared with the calculated fields from finite-element.

Keywords : magnetic recording, finite elements, asymmetrical magnetic heads, superposition, Laplace's equation
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