



ON THE MATERIAL GEOMETRY OF CONTINUOUSLY DEFECTIVE CORRUGATED GRAPHENE

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Abstract. Geometrical objects describing the material geometry of continuously defective graphene sheets are introduced and their compatibility conditions are formulated. Effective edge dislocations embedded in the Riemann-Cartan material space and defined by their scalar density and by local Burgers vectors, are considered. The case of secondary curvature-type defects created by this distribution of dislocations is analyzed in terms of the material space. The variational geometry of the material space closely related with the existence of a characteristic length parameter is proposed. The formula which describes, in a reference temperature, the influence of dislocations on the material Riemannian metric, is given.

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