



ON THE ISOTHERMAL GEOMETRY OF CORRUGATED GRAPHENE SHEETS

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Abstract. Variational geometries describing corrugated graphene sheets are proposed. The isothermal thermomechanical properties of these sheets are described by a two-dimensional Weyl space. The equation that couples the Weyl geometry with isothermal distributions of the temperature of graphene sheets, is formulated. This material space is observed in a three-dimensional orthogonal configurational point space as regular surfaces which are endowed with a thermal state vector field fulfilling the isothermal thermal state equation. It enables to introduce a non-topological dimensionless thermal shape parameter of non-developable graphene sheets. The properties of the congruence of lines generated by the thermal state vector field are discussed.

Contents

1	Introduction	1
2	Weyl Material Space of Graphene Sheets	8
3	Orthogonal Configurational Spaces	13
4	Geometry of Embedded Graphene Sheets	20
5	Congruence of Lines Generated by the Thermal State Vector Field	27
6	Conclusions and Remarks	31
	Appendix A - Affine Spaces and Mappings	33
	Appendix B - Differential Geometry of Affine Spaces	37
	Appendix C - Differential Operators	39
	References	41