DETERMINATION OF MECHANICAL EFFECTIVE PROPERTIES OF LAMINATED COMPOSITES: PERIODIC HOMOGENISATION

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Summary. The objective of this study is to determine the mechanical effective properties of carbon laminated composites by means of tridimensional modeling using periodic homogenisation techniques applied to a Representative Volume Element (RVE). The techniques developed have been implemented in commercial FE software ABAQUS using a Python Script. The individual properties of the micro constituents used for the numerical model have been obtained after performing individual experimental tests on both fiber and resin. Finally, the laminate behaviour has been validated from experimental data.