Time dependent creep analysis in thick FGM rotating disk with two-dimensional pattern of heterogeneity

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Highlights

- Two dimensional Generalized Differential Quadrature method has been used to obtain the time dependent creep response of FGM rotating thick disk.
- All mechanical and thermal properties are functions of SiC volume fraction which vary along the both radial and axial positions.
- Primary and secondary creep behaviors are based on Norton's creep law. Creep parameters are depended on temperature, particle size and volume fraction of particles.
- A novel solution algorithm is developed to solve the nonlinear form of system of equations.
- Results comparison with other exist creep studies in literature reveals the robustness, precision and high efficiency beside rapid convergence of present approach.