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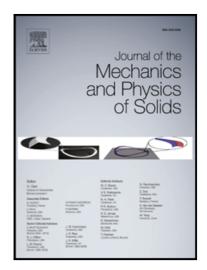
Routes to program thermal expansion in three-dimensional lattice metamaterials built from tetrahedral building blocks

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Highlights

- Thermal expansion is reframed for bi-material tetrahedral building blocks
- All possible material permutations in a bi-material tetrahedron are investigated
- A scheme is presented for spatial lattices to meet thermal expansion requirements
- Nine concepts are introduced with prescribed thermal expansion behaviour
- Thermal expansion, elastic properties and trade-off are assessed for all concepts



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