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Yield surfaces of periodic honeycombs with tunable Poisson's ratio

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Highlights

- A coupling effect between shear and axial stress on the yield surfaces is proposed.
- Coupled effect depends on the honeycomb types and their yield strains of the matrix.
- Yield surfaces of several typical honeycombs under in-plane loading are obtained.
- Uniaxial strengths have a remarkable increase with a flexible cell wall augmented.

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