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High energy absorption efficiency of thin-walled conical corrugation tubes mimicking coconut tree configuration

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Highlight

- A new bio-inspired conical corrugation tube (CCT) was proposed.
- The crashworthiness characteristics of the CCTs were investigated.
- The deformation modes of the CCTs were classified into four modes.
- The CCTs produced smoother force/displacement curves compared with the straight tube.
- The CCTs showed better SEA compared with the sinusoidal corrugation tubes.
- The theoretical results showed a good agreement with the numerical results.

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