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## Enabling quantum optomechanics for phononic crystals and superfluid helium films

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# Enabling Quantum Optomechanics for Phononic Crystals and Superfluid Helium Films

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*Cover: The front cover features the phononic-bandgap membrane above and a chaotic superfluid helium film below, set against a background of the aurora photographed by the author in Tromsø, December 2024. The back cover depicts the cascaded filter cavities.*

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