

## Measurement of Vortex Line Density in Superfluid Helium-4

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Liquid  $^4\text{He}$  undergoes a second-order phase transition to the superfluid state at 2.17 K. Compared to classical fluids, superfluidity allows existence of vortices with quantised circulation. These thin quantised vortex lines can tangle to produce quantum turbulence (QT).

In this work we present measurements of QT generated by an oscillating quartz tuning fork submerged in superfluid  $^4\text{He}$  at various temperatures. We quantitatively characterize QT by inferring the vortex line density  $L$  (total length of vortices per unit volume), using the second sound attenuation method.

### **Sekce**

Fyzika kondenzovaných látek

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