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Spin Caloritronics in Noncondensed Bose Gases CLEMENT WONG, HEDWIG VAN DRIEL, RAKPONG KITTINARADORN, HENK STOOF, REMBERT DUINE, Utrecht University — We consider coupled spin and heat transport in a two-component, atomic Bose gas in the noncondensed state. We find that the transport coefficients show a temperature dependence reflecting the bosonic enhancement of scattering, and discuss experimental signatures of the spin-heat coupling in spin accumulation and total dissipation. Inside the critical region of Bose-Einstein condensation, we find anomalous behavior of the transport coefficients, and in particular, an enhancement for the spin caloritronics figure of merit that determines the thermodynamic efficiency of spin-heat conversion.

Clement Wong
Utrecht University

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