

# Cooling close to absolute zero temperature: a recipe for discoveries

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Why do physicists freeze matter to extremely low temperatures? Why is it worthwhile to cool to temperatures which are a billion times lower than that of interstellar space? In this talk, I will experimentally demonstrate phenomena at low temperature and discuss new forms of matter. Of special interest are superfluids which can flow without dissipation. Recently, we have observed a supersolid which is gaseous, liquid and solid at the same time.