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**Acoustic Hawking radiation in dynamically expanding Bose-Einstein condensate** TAKAO MORINARI, Yukawa Institute for Theoretical Physics, Kyoto University — Black holes are not just an absorber but emit radiation. Verification of this phenomenon, called Hawking radiation, for real black holes is almost hopeless because the characteristic temperature is much lower than the cosmic microwave background radiation. There are attempts to verify Hawking radiation physics using acoustic black holes. In this paper, I will present a numerical simulation result for a dynamically expanding Bose-Einstein condensate of cold atoms. The result shows that the radiation spectrum obeys the Planck distribution function with the temperature on the order of 0.1nK and the particle creation occurs near the horizon. I will discuss the result from the view point of the phase coherence of Bose-Einstein condensate.

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