

**Cooling of molecular gas by periodic series of light pulses
(based on Doppler-effect)**

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Abstract. It is shown that a gas can be cooled by irradiating it with a periodic series of light pulses, which has a double resonant effect on the low-frequency Doppler half. The irradiation process continues until the Doppler broadening reaches the natural broadening. The natural broadening is the broadening of radio frequency levels determined by the uncertainty principle. The minimum temperature achievable by this method is in the millikelvins range.

Keywords: cold atoms, nonlinear resonance, quantum pendulum