



## VIDEO Colloquium:

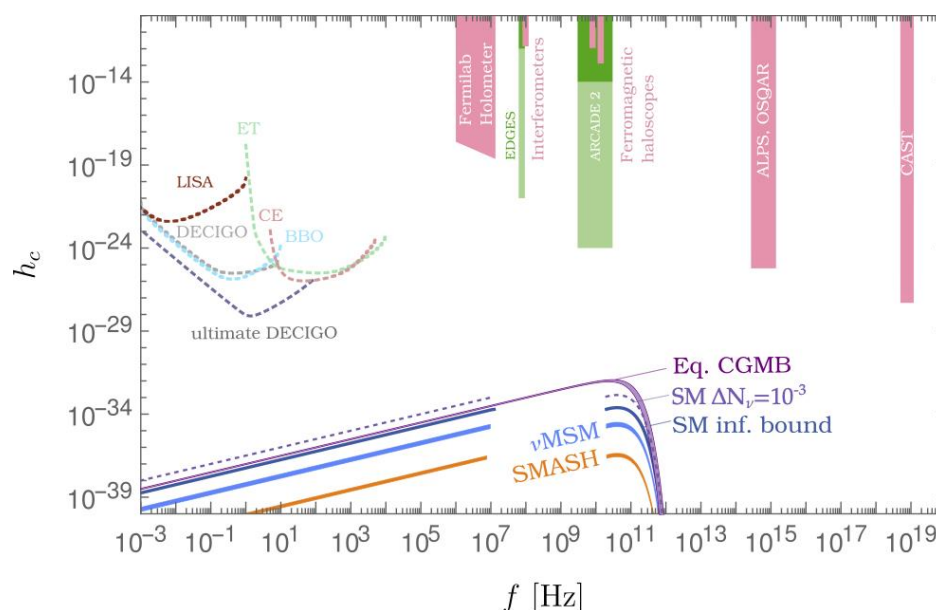
# Gravitational Waves as Big Bang Thermometer.

**Tuesday, 8 December, 2020**

**Webcast 16:45 h**

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There is a guaranteed background of stochastic waves produced in the thermal plasma in the early universe. Its energy density per logarithmic frequency interval scales with the maximum temperature which the primordial plasma attained at the beginning of the standard hot big bang era. It peaks in the microwave range, at around 80 GHz  $[106.75/g^*s]^{1/3}$ , where  $g^*s$  is the effective number of entropy degrees of freedom in the primordial plasma at the maximum temperature. We present a state-of-the-art prediction of this Cosmic Gravitational Microwave Background (CGMB) for the case of the Standard Model (SM) as well as for several of its extensions. Furthermore, we discuss the current upper limits on the CGMB and the prospects to detect it in laboratory experiments and thus measure the maximum temperature and the effective number of degrees of freedom at the beginning of the hot big bang.



**Zoom connection details:**

**Meeting ID: 996 1652 8733**

**Meeting Password: 733220**

