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Jan Rafelski, ”Time Evolution of Hot Hagedorn Universe”

Friday, 15 December 2017 10:30 (45)

The task: connect the present day visible Universe with prior eras, back to primordial conditions at and above Hagedorn temperature, the point of creation of matter as we know it. Matter and antimatter emerged from Quark_Gluon Plasma when the Universe was 13 microseconds old. A nano-fraction surplus of matter survives the ensuing annihilation process. A dense electron positron-photon-neutrino plasma evolves. Electrons and positrons annihilate while neutrinos decouple. All this takes less than a second, this creates the context for the big-bang nucleo-synthesis and ultimately leads to the visible Universe around us. The continuous evolution across many evolutionary eras will be discussed and the Universe energy composition across cosmological history illustrated.

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