

What was before the Big Bang?

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Abstract

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The Einstein interpretation (EI, classical general theory of relativity) says: Before the Big Bang there was nothing, neither space, nor time, nor space-time. But the EI is contradicted by the measurement of two different Hubble constants, because the expansion of the universe cannot take place at two different speeds at the same time. That leaves the Lorentz interpretation (LI): The Big Bang is the explosion of a supermassive object. Its mass must come from somewhere. The simplest assumption: by accretion from emissions from neighboring galaxy clusters on a large scale analogous to the growth of galaxy nuclei on a small scale. This is supported by the observation of galaxies older than the Big Bang [1]. *The main objection*: Supermassive objects are black holes and cannot explode. The proposed solution to this objection can be found at www.grt-li.de or [2] Further observations see [3], [4].

Literature

- [1] Labbé, I., van Dokkum, P., Nelson, E. et al. A population of red candidate massive galaxies ~600 Myr after the Big Bang. *Nature* **616**, 266–269 (2023) and Olivia Dittrich [Berliner Morgenpost](#) 6.3.2023
- [2] J. Brandes, J. Czerniawski, L. Neidhart: *Special and General Theory of Relativity for physicists and philosophers* 2023, chapter 21, 22, page 279
- [3] Further observations on different Hubble parameters, angular momentum, old stars, galaxies, galaxy clusters that already existed before the Big Bang are increasingly discussed in daily newspapers and other media (youtube).
- [4] Chapter 24.11.2 of [2].