

O POČETKU ŠIRENJA VASIONE

Dragi Radojević

Stiven Houking je ponudio zanimljiv odgovor na pitanje šta je bilo pre početka širenja vasiona: na početku širenja sva materija je bila na jednom mestu, u singularitetu. U tavnim okolnostima gustina materije je bila beskonačna i zato nisu važili zakoni fizike. Pošto nisu važili deterministički zakoni stanje vasiona posle Big Benga nije zavisilo ni od čega što je moglo da se desi pre takvog singulariteta. Količina materije u Vasioni nije morala da bude ista kao pre Big Benga, jer nisu važili zakoni održanja.

Pošto eventualni događaji pre singulariteta nisu mogli da imaju posledice na razvitak Vasiona možemo da smatramo da nisu definisani i da razmatramo širenje vasiona kao da je to njen početak.

Ovu ideju ćemo ilustrovat koristeći Kasnerov kosmološki model.

A NOTE ON THE EXPANSION OF THE UNIVERSE

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In a recent paper Stephen Hawking offered an interesting answer to the question of what happened before the beginning of the expansion of the Universe:

” At this time, the Big Bang, all the matter in the Universe would have been on top on itself, in the singularity. The density would have been infinite. At the singularity, all the laws of physics would be broken down. This means that the state of the Universe, after the Big Bang will not depend on anything that may happened before, because the deterministic laws that govern the Universe , will break down in the Big Bang. Even the amount of matter in the Universe can be different to what it was before the Big Bang, as the Law of Conservation of Matter, will break down at the Big Bang.

Since events before the Big Bang have no observational consequences, one may as well cut them out of the theory and say that the Universe began at the Big Bang. Events before the Big Bang are simply not defined, because there is no way one could measure what was happened at them.”

We shall try to illustrate this idea using the Kasner cosmological model.

L I T E R A T U R A

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- 3) D.Kramer, E.Herlt, M.Mac Callum : *Exact solutions of Einstein's field equations Berlin* (1980)