General Relativity and Quantum Cosmology

On the "scattering law" for Kasner parameters in the model with one-component anisotropic fluid

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A multidimensional cosmological type model with 1-component anisotropic fluid is considered. An exact solution is obtained. This solution is defined on a product manifold containing n Ricci-flat factor spaces. We singled out a special solution governed by the function cosh. It is shown that this special solution has Kasner-like asymptotics in the limits $\tau \to + 0$ and $\tau \to + \infty$, where τ is a synchronous time variable. A relation between two sets of Kasner parameters α_{∞} and α_{0} is found. This formula (of "scattering law") is coinciding with that obtained earlier for the S-brane solution (when scalar fields are absent).

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