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Integrable F(R) gravity cosmological models with an additional scalar field

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We consider modified gravity cosmological models that can be transformed into two-field chiral cosmological models by the conformal metric transformation. For the R^2 gravity model with an additional scalar field and the corresponding two-field model with the cosmological constant and nonstandard kinetic part of the action, the general solutions have been obtained in the spatially flat FLRW metric. We analyze the correspondence of the cosmic time solutions obtained and different possible evolutions of the Hubble parameters in the Einstein and Jordan frames.

This talk is based on the paper [1].

[1] Vsevolod R. Ivanov and Sergey Yu Vernov. Integrable modified gravity cosmological models with an additional scalar field. European Physical Journal C, 81(11):985, 2021.

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