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## Late stage of the Universe evolution taking into account the vacuum effects

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The investigations of quantum vacuum effects indicate that in the phenomenology they are responsible for the existence of the cosmological constant  $\Lambda$ , and besides in the early de Sitter model one has  $\Lambda \sim H^4$  ( $H$ - is the Hubble parameter), whereas for the vacuum energy induced by QCD condensate at late times  $\Lambda \sim H$ . In the present work, on the base of the modified Jordan theory, we consider models of the expanding Universe with a cosmological scalar  $\varphi(y) = \alpha H^2$ . For different values of the coupling constants  $\xi$  the values of the parameter  $\alpha$  are obtained corresponding to an accelerated expansion.

**Primary author:** KOTANJYAN, Anna (Yerevan State University)

**Co-authors:** Prof. CHUBARYAN, Edvard (Yerevan State University); Prof. HARUTYUNYAN, Gohar (Yerevan State University); Prof. AVAGYAN, Roland (Yerevan State University); Prof. SUSHKOV, Sergey (Kazan Federal University)

**Presenter:** KOTANJYAN, Anna (Yerevan State University)