1056-35-1337 **Anahit Galstyan*** (agalstyan@utpa.edu), Department of Matrhematics, University of Texas-Pan American, 1201 West University Drive, Edinburg, TX 78539, and **Tamotu Kinoshita** and **Karen Yagdjian**. *Fundamental solutions of the wave equation in the Einstein-de Sitter spacetime.*

In this talk we introduce the fundamental solutions of the wave equation in the Einstein-de Sitter spacetime. The last one describes the simplest non-empty expanding model of the universe. The covariant d'Alambert's operator in the Einstein-de Sitter spacetime belongs to the family of the non-Fuchsian partial differential operators. In this talk we investigate initial value problem for this equation and give the explicit representation formulas for the solutions. The equation is strictly hyperbolic in the domain with positive time. On the initial hypersurface its coefficients have singularities that make difficulties in studying of the initial value problem. In particular, one cannot anticipate the well-posedness in the Cauchy problem for the wave equation in the Einstein-de Sitter spacetime. The initial conditions must be modified to so-called weighted initial conditions in order to adjust them to the equation. We also show the $L_p - L_q$ estimates for solutions. Thus, we have prepared all necessary tools in order to study the solvability of semilinear wave equation in the Einstein-de Sitter spacetime.

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