Ferhan M. Atici* (ferhan.atici@wku.edu), 1906 College Height Blvd., Department of Mathematics, Western Kentucky University, Bowling Green, KY 42101, Samuel Chang (samuel.chang176@topper.wku.edu), Gatton Academy of Science and Mathematics, Western Kentucky University, Bowling Green, KY 42101, Kamala Dadashova (kamala.dadashova642@topper.wku.edu), 1906 College Heights Blvd., Department of Mathematics, Western Kentucky University, Bowling Green, KY 42101, and Jagan Mohan Jonnalagadda (j.jaganmohan@hotmail.com), Birla Institute of Technology, and Science Pilani, Department of Mathematics, Hyderabad- Telangana, India. Linear fractional order h-difference equations.

In this talk, we introduce linear fractional order h-difference equations, where the order of the equation is any non-integer positive real number. The nabla fractional operators are used in the sense of Riemann-Liouville definition. We obtain the general solution of the fractional order equation by means of Mittag-Leffler type functions. Several properties of the Mittag-Leffler type functions are obtained. As an application, an eigenvalue problem with Dirichlet boundary condition is considered. We give a method for explicit calculation of the eigenvalues of the boundary value problem. (Received September 14, 2020)