

ON A SYSTEM OF DIFFERENCE EQUATIONS**Allaguly Gurbanlyyev**A Kelesoglu Education Faculty, Department of Mathematics, N. Erbakan University
Konya 42090, **TURKEY****ABSTRACT**

In this paper, I investigated the solutions of the system of the difference equations

$$x_{n+1} = \frac{x_{n-1}}{y_n x_{n-1} - 1}, \quad y_{n+1} = \frac{y_{n-1}}{x_n y_{n-1} - 1}, \quad z_{n+1} = \frac{x_n}{y_n}$$

where $y_n x_{n-1} \neq 1$, $x_n y_{n-1} \neq 1$ and $x_0, x_{-1}, y_0, y_{-1} \neq 0, z_0, z_{-1} \in \mathbb{R}$.

Keywords: Difference equations, difference equations systems, solutions, equilibrium point, behavior of solutions, rational difference equations, systems of rational difference equations.