The talk is devoted to symmetric rational mappings on the complex Banach space $\ell_1$. Symmetric polynomials and analytic functions on $\ell_p$ were studied in [1, 2, 3].

Let $x, y \in \ell_1$. We say that $x \sim y$ if $F_n(x) = F_n(y)$ for every $n \in \mathbb{N}$, where

$$F_n(x) = \sum_{k=1}^{\infty} x_k^n.$$

Let us denote by $\mathcal{M}$ the set of all classes of the equivalence,

$$\mathcal{M} = \{[x]: x \in \ell_1\} \text{ where } [x] = \{y \in \ell_1: y \sim x\}.$$

There are natural operations ‘$\cdot$’ and ‘$\circ$’ on $\mathcal{M}$ such that $(\mathcal{M}, \cdot, \circ)$ is a semiring (see [3, 4, 5]).

**Theorem.** For every $k \in \mathbb{N}$ there is a map $W^k: \mathcal{M} \rightarrow \mathcal{M}$ such that for every $x \in \ell_1$,

$$F_n(W^k([x])) = \frac{(F_n(x))^k}{1 - F_n(x)}, \quad n \in \mathbb{N}.$$

**References**


Lviv National Agrarian University, 1, V. Velykogo str. Dublyany 80381, Ukraine

E-mail address: oleggol@ukr.net