ABSTRAK

REPRESENTASI OPERATOR LINIER DARI RUANG BARISAN ℓ_4 KE RUANG BARISAN $\ell_{4/3}$

Oleh

Kiki Alendra

Suatu pemetaan pada ruang vektor khususnya ruang bernorma disebut operator. Salah satu kajian tentang operator, dalam hal ini operator linear, merupakan suatu operator yang bekerja pada ruang barisan. Banyak kasus pada operator linear dari ruang barisan ke ruang barisan dapat diwakili oleh suatu matriks takhingga. Matriks takhingga yaitu suatu matriks yang berukuran takhingga kali takhingga. Sebagai contoh, suatu matriks $A : \ell_4 \rightarrow \ell_{4/3}$,dengan $A = \begin{bmatrix} a_{11} & a_{12} & \dots \\ a_{21} & a_{22} & \dots \\ \vdots & \vdots & \vdots \end{bmatrix}$, $\ell_4 = \left\{x = (x_i) \left| (\sum_{i=1}^{\infty} |x_i|^4)^{\frac{1}{4}} < \infty \right.\right\}$, dan $\ell_{4/3} = \left\{x = (x_i) \left| \left(\sum_{i=1}^{\infty} |x_i|^{\frac{4}{3}}\right)^{\frac{3}{4}} < \infty \right.\right\}$ merupakan barisan bilangan real. Selanjutnya dikontruksikan operator A dari ruang barisan ℓ_4 ke ruang barisan $\ell_{4/3}$ dengan basis standar $\{e_k\}$ dengan $e_k = (0,0, \dots, 1_{(k)}, \dots)$ dan ditunjukkan bahwa koleksi semua operator membentuk ruang Banach.

Kata Kunci : *Operator, Ruang Barisan Terbatas*

ABSTRACT

REPRESENTATION OF LINEAR OPERATOR FROM SEQUENCE SPACE ℓ_4 TO SEQUENCE SPACE $\ell_{4/3}$

by

Kiki Alendra

The mapping of vector space, especially on norm space is called operator. One of the cases about the operator, in case of linear operator, is the operator which works on sequence space. There aremany cases in the linear operator from one sequence space to another which can be represented by infinite matrices.
The infinite matrices are the matrices with infinite sizes.
For $A : \ell_4 \rightarrow \ell_{4/3}$,where $A = \begin{bmatrix} a_{11} & a_{12} & \dots \\ a_{21} & a_{22} & \dots \\ \vdots & \vdots & \vdots \end{bmatrix}$, $\ell_4 = \left\{ x = (x_i) \left| (\sum_{i=1}^{\infty} |x_i|^4)^{\frac{1}{4}} < \infty \right. \right\}$, and $\ell_{4/3} = \left\{ x = (x_i) \left| \left(\sum_{i=1}^{\infty} |x_i|^{\frac{4}{3}} \right)^{\frac{3}{4}} < \infty \right. \right\}$ is a sequence real numbers. Furthermore, it can be constructed an operator A from finite sequence space ℓ_4 to sequence space $\ell_{4/3}$ by using a standard basis (e_k) and it can be proven that the collection all the operators become Banach space.

Key Words : *Operator,Finite Sequence Space*