

### Three Equivalent $n$ -Norms on the Space of $p$ -Summable Sequences

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## ★ Three Equivalent $n$ -Norms on the Space of $p$ -Summable Sequences

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Muh NUR Hendra GUNAWAN

### Abstract

Given a normed space, one can define a new  $n$ -norm using a semi-inner product  $g$  on the space, different from the  $n$ -norm defined by Gähler. In this paper, we are interested in the new  $n$ -norm which is defined using such a functional  $g$  on the space  $\ell^p$  of  $p$ -summable sequences, where  $1 \leq p < \infty$ . We prove particularly that the new  $n$ -norm is equivalent with the one defined previously by Gunawan on  $\ell^p$ .

### Keywords

Equivalence,  $n$ -norm, Semi-inner product  $g$ ,  $p$ -summable sequence space

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