

# The Construction of a Continuous Linear Representation From a Topological Group Into Topological Module Space Over Principle Ideal Domain

*Diah Junia Eksi Palupi*

Department of Mathematics, Faculty of Mathematics and Natural Sciences  
Universitas Gadjah Mada,  
Yogyakarta, Indonesia

Let  $\rho_c$  be a continuous homomorphism from a topological group  $G$  into  $GL_c(V)$  of all continuous bijective transformations. Homomorphism  $\rho_c$  like above is called a continuous linear representation from a topological group  $G$  into a topological vector space  $V$ . Because a module space is a vector space over a ring, not a field, we have construct a topological module space firstly. In this paper, we will construct a continuous linear representation from a topological group into a topological module space over principle ideal domain

**Keywords:** *topological group, topological module space, continuous linear representation.*