1152-47-294 **Carmen Judith Vanegas*** (cvanegas@utm.edu.ec), Universidad Técnica de Manabí, Avenida Urbina y Che Guevara, Puerta 1, Edificio del Rectorado, 130104 Portoviejo, Manabi, Ecuador.

Integral operators in Clifford type algebras.

We present a theory of integral operators on the Clifford type algebra generated by the structure relations:

$$e_i e_j + e_j e_i = -2B_{ij},$$

for $i, j = 1, 2, \cdots, n$, where the B_{ij} are the entries of a symmetric and positive definite matrix $B \in \mathbb{R}^{n\times n}$. In particular, if B is the identity matrix, then the above structure relations correspond for those in classic Clifford algebra. We show the integral formulas of Borel-Pompeiu and Plemelj-Sokhotzki type, necessary to solve boundary values problems for partial differential equations, associated to the differential operators defined in this parametric algebra. From these integral formulas, standard integral operators are defined, which are counterpart for the Teodorescu, Cauchy-Bitsadze and Hardy projection operators and whose properties allow us to solve the considered problems. As applications, we consider some Dirichlet boundary problems for the Dirac operator $\mathcal{D}$ defined in the parametric algebra and the elliptic operator $\mathcal{D}^2 = -div(B\nabla)$. This second order operator is of interest in physic and engineering because one of its application is related to the problem heat diffusion on anisotropic media, the symmetric tensor B represent the thermal conductivity of the material. (Received September 06, 2019)