1051-58-77 **Igor Prokhorenkov*** (i.prokhorenkov@tcu.edu), Department of Mathematics, TCU Box 298900, Fort Worth, TX 76129, and **Ken Richardson** (k.richardson@tcu.edu), Department of Mathematics, TCU Box 298900, Fort Worth, TX 76129. *Natural Equivariant Dirac Operators.*

We describe a new class of natural, explicitly defined, transversally elliptic differential operators over manifolds with compact group actions. Under certain assumptions, the symbols of these operators generate all the possible values of the equivariant index. Moreover, the components of the representation-valued equivariant index coincide with those of an elliptic operator constructed from the original data. (Received August 13, 2009)