1023-53-917 **Andrew Bucki*** (ajbucki@lunet.edu), Department of Mathematics, Langston University, Langston, OK 73050. *Lie Groups of Automorphisms on Almost r-Paracontact Riemannian Manifolds.* Preliminary report.

Let M_n be an n-dimensional Riemannian manifold with a positive definite metric g. If on M_n there exist a tensor field φ of type (1,1), r vector fields $\xi_1, \xi_2, \ldots, \xi_r$ $(r < n)$, and r 1-forms $\eta^1, \eta^2, \ldots, \eta^r$ such that $\eta^\alpha(\xi_\beta) = \delta^\alpha_\beta$, $\varphi^2 = Id - \eta^\alpha \otimes \xi_\alpha$, $\eta^\alpha(X) = g(X, \xi_\alpha)$, $\alpha \in (r)$, and $g(\varphi X, \varphi Y) = g(X,Y) - \sum_\alpha \eta^\alpha(X)\eta^\alpha(Y)$, then $\Sigma = (\varphi, \xi_\alpha, \eta^\alpha, g)$ is said to be an almost r-paracontact Riemannian structure on M_n, and M_n is an almost r-paracontact Riemannian manifold. A vector field X on (M_n, Σ) is an infinitesimal automorphism of M_n if all structure tensors are Lie-parallel with respect to X. It is shown that the set L of all infinitesimal automorphisms of M_n is a Lie algebra and its maximum dimension is determined. Also, the maximum dimension of the group of isometries of M_n is found. A diffeomorphism f of M_n onto itself is an automorphism of M_n if it preserves all structure tensors. It is proven that the set $A(M_n)$ of all automorphisms of M_n is a Lie group. (Received September 22, 2006)