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Douglas Cenzer and **Zia Uddin*** (uddinz@uwplatt.edu), Mathematics Department, 137 Gardner Hall, University of Wisconsin-Platteville, Platteville, WI 53818. *Space Complexity of Torsion-Free Abelian Groups*.

A logspace model is constructed for the additive group of rational numbers and other torsion-free abelian groups. Categoricity of these groups is also studied and conditions are given under which two isomorphic logspace structures will have a linear space isomorphism. (Received September 10, 2007)