1004-70-19 **Ke-ying Guan*** (kyguan@yahoo.com), Science College, Beijing Jiaotong University, 100044 Beijing, Peoples Rep of China, and **Yanxia Hu** (yxiahu@163.com), Science College, Beijing Jiaotong University, 100044 Beijing, Peoples Rep of China. *Generalized Homogeneous Autonomous System and Gyroscope.* Preliminary report.

Base on the character of a Lie group admitted by an autonomous system, the homogenety is defined. Using the property of the first integrals and invariant manifold of such system, we found out the fourth integral for the Kowalevskaya gyroscope under the intrinsic condition $(A = B = 2C, Z_g = 0)$. The corresponding result give in "Mathematical Aspects of Classical and Celestial Mechanics", second edition (Springer-Verlag, New York, 1997,Arnold, V. I., Kozlov, V.V. and Neishtadt, A.I.) is proved to be wrong. And we found also a five dimensional invariant manifold for a particular asymmetric heavey gyroscope. (Received December 15, 2004)