

## Conserved charges as a manifestation of extra space symmetries

*Monday, 2 October 2017 15:10 (170)*

Non gauge symmetries like baryon one are usually connected with some internal symmetries. It is not clear up to now whether these symmetries have taken place from the beginning or they were formed in the early Universe.

On the other hand, the idea of extra space almost inevitably leads to charge non conservation. Indeed in the framework of multidimensional gravity observed low energy symmetries are the consequences of isometries of extra space. It is assumed that there are no any Killing vectors of a nucleated manifold in the very beginning. The first stage of an extra space formation consists of its symmetrization. Hence, there are no conserved charges at this stage. Charge conservation appears much later when the extra space geometry acquires appropriate Killing vectors. The situation is similar to those concerning the problem of baryon asymmetry.

In the present paper we consider a mechanism of the baryon asymmetry generation accompanied by symmetrization of extra space. It is assumed that the baryon symmetry (asymmetry) is the consequence of symmetry (asymmetry) of extra space. The corresponding symmetry of the theory is restored during the process of evolution at later stages.

**Primary author(s) :** Prof. RUBIN, Sergey (MEPhI)

**Presenter(s) :** Prof. RUBIN, Sergey (MEPhI)

**Session Classification :** Poster session and coffee&reception