

**About Algorithm of Changes of Systolic - Diastolic Motion Along the Axis  
of the Center of Heart Gravity in Normal and in Pathological Cases**

*MamantiRogava<sup>a</sup>, Ilia Tavkhelidze<sup>b</sup>*

E-mail: [mamanti.rogava@rsu.ge](mailto:mamanti.rogava@rsu.ge)<sup>a</sup>, [ilia.tavkhelidze@rsu.ge](mailto:ilia.tavkhelidze@rsu.ge)<sup>b</sup>

<sup>a</sup>Institute of Genetics, Department of Biology, Iv.Javakhsishvili State University, University str # 2, Tbilisi 0186  
Georgia

<sup>b</sup>Department of Mathematics, Iv.Javakhsishvili State University, University str # 2, Tbilisi 0186 Georgia

The failure of heart 'contractility' function, caused by definite changes in myocardial fibers, affects on the systolic-diastolic conformation of the 'fractal belt' and on changes in architecture of heart camera building. Clinically we find these changes as ventricular remodeling and volume over tension. The real modeling of this process was impossible by those geometric –static or semi-rotating heart models that existed up today. The study of geometric and dynamic characteristics of the Generalized Möbius-Listing bodies by Prof. I. Tavkhelidze (in 2011) and the mathematical analysis of the destruction of the integrity of this object showed one of the ways of solving these actual problems. Namely, the appropriate mathematical way created by the professor showed the real picture of anatomical and physiological dynamics of the heart muscle, i.e. Myocardium and cameras during their remodeling.

**References:**

- [1] M.Rogava, Cardiology and Internal Medicine XXI (2007), Tbilisi, pp. 78-98
- [2] M.Rogava, I.Tavkhelidze, Cardiology and Internal Medicine N1-4 (XXXIII-XXXVI), Tbilisi, 2011 pp. 117-128