Summaries

Mateusz Brzęk, Marta Zagórowska, Wojciech Mitkowski: **The approximate location of imperfection in a unit circle using the spectrum of Laplace operator as a research tool** • Automatyka/ Automatics 2015, Vol. 19, No. 1

In the following article we will try to find the dependence between the location of imperfections in a closed domain and the spectrum of the Laplace operator for this region. In the theoretical part we will define the spectral problem which is solved by eigenvalues. These eigenvalues are dependent on location and size of the imperfection. However, we are interested in the inverse task which consists in localizing the imperfection of the domain on a basis of the spectrum of the operator.

Keywords: *Laplace operator, location of imperfections, spectrum analysis, spectral theory, eigenvalues*

Waldemar Bauer: **New approach in modelling of the patients behavior in Primary Health Care (PHC)** • Automatyka/ Automatics 2015, Vol. 19, No. 1

The purpose of this paper is to show the concept of simulation of Primary Health Care (PHC) patients behavior. There are two reasons for interest in this area. The first of them is the need for support in decision making regarding financing and management of PHC facilities on levels from national (Natonal Health Fund) to local (PHC provider). The second one is the lack of effective methods for such population modeling. In this paper author describe an idea of probability distribution modeling and present preliminary results of patient visits simulation over a period of a year.

Keywords: *PHC, stochastic process modelling, population modeling*