

Zadanie na cvičenie na 20.4.2010

Dolu uvedené témy majú svoje www stránky s popisom problému spolu s javovskými apletmi. Vytvorte vlastné prezentácie problémov (prípadne s vlastnou rešeršou podobných riešení), s využitím apletov k svojmu problému navrhnete numerické experimenty a vytvorte relevantné grafy

#### 1. Time walkers and spatial dynamics of ageing information

The value of information decays with time and its distribution is essential for living system's ability to coordinate and adapt. Random walkers are often used to model this distribution process and, in doing so, one effectively assumes that information maintains its relevance over time. However, the value of information in social and biological systems often changes over time and must continuously be updated. To capture the spatial dynamics of ageing information, we introduce the time walkers. A time walker moves just like a random walker, but interacts with traces left by other walkers, some representing older information, some newer.

<http://cmol.nbi.dk/models/timewalkers/twApplet.html>

#### 2. Modeling the origin of interest groups

Social networks represent communication channels and therefore also limits on information access in a society. The applet considers agents who try to bypass these information constraints, driving an ever-changing social network. The model emphasizes communication barriers in the system as the driving force behind group formation.

<http://cmol.nbi.dk/models/igroup/igroup.html>

#### 3. Dynamics of Opinions and Social Structures

Social groups with widely different music tastes, political convictions, and religious beliefs emerge and disappear on scales from extreme subcultures to mainstream mass-cultures. Several positive feedback mechanisms drive the diversity of beliefs in social systems. Some of these mechanisms can be analyzed in terms of a hugely simplified model of a dynamic network that incorporates basic feedback between information assembly through communication and formation of social connections.

<http://cmol.nbi.dk/models/ibattle/ibattle.html>

#### 4. Self-Assembly of Information in Networks

We show that it is possible to build a reliable perception of the whole through repeated small talks. We simply let agents memorize the acquaintances that provided the newest information about other agents together with the age of this information.

<http://cmol.nbi.dk/models/infowall/infowall.html>