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## SEMINÁR ÚI SAV,

ktorý sa bude konať v utorok 20.2. 2018 o 10.00 hod.  
v zasadačke č. 102

### Program:

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### **SkyBat: a swarm robotic model inspired by fission-fusion behaviour of bats**

Swarm robotic systems are characterized by collective behaviour that emerges from the interactions between robots and between robots and environment. An inspiration for creation of such systems can be often found in nature, for example in movement of insect, flocking of birds or in schooling of fish. Swarm robotics was also inspired by bats - the only flying mammals on this planet.

We present a first version of a more advanced agent-based model called SkyBat, which is able to fully comprehend roost-switching dynamics of bat groups. The model is based on key patterns of swarming behaviour of tree-dwelling bats (*Nyctalus leisleri*) revealed by our recent studies [1], [2].

Among the unique features of SkyBat algorithm belong:

- (i) ability to perform group movement from one location of interest to other without a group-leader,
- (ii) ability to effectively search for some targets of interest in unknown environment,
- (iii) ability to perform a flexible non-centralized decision-making in rapidly changing environment.

[1] Nad'ò L. and Kaňuch P.: Dawn swarming in tree-dwelling bats - an unexplored behaviour. *Acta Chiropterologica*, 15: 387-392, (2013)

[2] Nad'ò L. and Kaňuch P.: Swarming behaviour associated with group cohesion in tree-dwelling bats. *Behavioural Processes*, 120: 80-86, (2015)

Tešíme sa na stretnutie s Vami pri šálke kávy alebo čaju.

Ing. Ivana Budinská, PhD.  
riaditeľka