Bats use maps

A conference to explain how these animals orient themselves in the dark

March 31, 2014 - 12 am
SISSA, Main Lecture Hall
Via Bonomea, 265 – Trieste

Studying the echolocation mechanisms of bats, scientists have discovered how two- and three-dimensional spatial maps are formed in their brain. Researchers like Nachum Ulanovsky, of the Weizmann Institute (Rehovot, Israel), are working to extend the knowledge acquired from bats to other mammals, including humans. Ulanovsky will be giving a public talk, as part of the SISSA colloquia, in which he will present the latest discoveries and future outlook of research in this field.

When travelling, a map always comes in handy, even if you are a bat. In bats, these are “cognitive” maps: the brains of these flying mammals in fact contain a two- and three-dimensional representation of space which allows them to fly and hunt for food without making mistakes,
even in the dark. By observing the behaviour of fruit bats in the wild and monitoring their movements with GPS devices, Nachum Ulanovsky, a neurophysiologist from the Weizmann Institute in Israel, recently discovered that bats, like migratory birds and some insects, rely on very extensive maps that allow them to navigate over long distances.

These maps are “built” on the basis of the auditory stimuli used by the animal’s echolocation system. Like few other species, bats use a bio-sonar system to move around (even in the dark): they emit characteristic sounds, mainly in the ultrasonic frequency and, on the basis of the reflection (echo), they are able to establish the position of objects and preys in space.

Ulanovsky will be presenting the results of his research at the next SISSA colloquium, a public conference scheduled for March 30 at 12 noon in the Main Lecture Hall of the International School for Advanced Studies (SISSA) of Trieste.

The conference is open to the public and will be held in English.

USEFUL LINKS:

- Web page of Ulanovsky’s laboratory: [http://goo.gl/EYtsdi](http://goo.gl/EYtsdi)

IMAGE:

- Flying bat (credits: Michael Hooper - [http://bit.ly/1g8cEBn](http://bit.ly/1g8cEBn))

Contact:

Communication office: pressroom@sissa.it
Tel: (+39) 040 3787557 | (+39) 340-5473118, (+39) 333-5275592
via Bonomea, 265
34136 Trieste

More information about SISSA: [www.sissa.it](http://www.sissa.it)