

Animal navigation - a search for behavioural and physiological mechanisms

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The long-distance navigational abilities of animals have fascinated humans for centuries and challenged scientists for decades. How is a butterfly with a brain weighing less than 0.02 grams able to find its way to a very specific wintering site thousands of kilometers away, even though it has never been there before? And, how does a migratory bird circumnavigate the globe with a precision unobtainable by human navigators before the emergence of GPS satellites? To answer these questions, multidisciplinary approaches are needed. Therefore, we will use mathematical modeling, quantum chemistry, molecular biology, neurobiology, computer simulations and newly developed laboratory equipment in combination with behavioral experiments and analyses of field data to achieve a better understanding of the behavioral, molecular and physiological mechanisms enabling birds and insects to navigate over thousands of kilometers.

Projektbeteiligte

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