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## The TBE natural focus landscape structure in Eastern Bavaria as basis for computer-assisted surveillance in Monid-Habitrack

### Inhalt

Tick-borne encephalitis (TBE) is the most important tick-borne viral disease in Europe. The TBE virus circulates in small areas, called natural foci, between ticks and small mammals. The exact dynamics of the transmission cycle are still not well known. Although the existence of natural foci was established 90 years ago, still no knowledge on the basic structural components of TBE natural foci exists.

During the last 15 years TBE foci were studied according to locations of infection of TBE patients in the two districts, Amberg and Schwandorf, in Eastern Bavaria. The locations were sampled for ticks and collected ticks were tested for TBE virus by PCR and in positive ticks virus isolation in cell culture was conducted. The landscape structure of confirmed TBE natural foci was documented.

A total of 25 TBE foci in the two districts could be identified. Most of the TBE foci have a size of about 50 × 100 m and have the structure of a forest meadow surrounded on three or four sides from mixed forest. In three-sided foci the open side was always to the north or to the west.

Based on these data in the Monid-Habitrack project the identified foci will be studied in detail using drone analyses and data will be transferred to develop KI based models for the identification of TBE natural foci independent of TBE infection of patients as a tool of improved surveillance of tick-borne infections.

### Keywords

Tick-borne encephalitis, natural focus, landscape structure

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### Professional Status of the Speaker

Senior Scientist

### Junior Scientist Status

No, I am not a Junior Scientist.

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