Book of abstracts

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Temporal variation of Dobrava-Belgrade virus (Bunyaviridae, Hantavirus) seroprevalence in a yellow-necked mice population in northern Italy

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Dobrava-Belgrade virus (DOBV) is the most pathogenic hantavirus in Europe with a case-fatality rate of up to 12%. Here we present the prevalence of antibodies to DOBV in a population of Apodemus flavicollis in the Province of Trento (northern Italy) from 2000-2013. Over the 14-year study period, 2189 animals were live-trapped and mean hantavirus seroprevalence was 3.15% (S.E.=0.3 %), ranging from 0% (in 2000, 2002 and 2003) to 12.5% (in 2012) with an abrupt increase from 2010.
Climatic (temperature and precipitation) and host (population density; individual body mass and sex; and larval tick burden) variables were analyzed with Generalized Linear Models using multi-model inference to select the best model. Mean annual precipitation, annual maximum temperature and individual body mass were found to have a positive effect on DOBV seroprevalence. We discuss possible conditions that may explain the observed pattern. We are also exploring whether contact rates differed among individual yellow-necked mice and how host heterogeneities may influence potential DOBV transmission using network theory.