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## THRESHOLD DYNAMICS IN A PERIODIC MODEL FOR ZIKA VIRUS DISEASE

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In this talk, we present a compartmental model to study the transmission of Zika virus disease including spread through sexual contacts and asymptomatic carriers. To incorporate the impact of the periodicity of weather on the spread of Zika, we apply a non-autonomous model with time-dependent mosquito birth, death and biting rates, which shown that the global dynamics is determined by the basic reproduction number  $R_0$  which is defined through the spectral radius of a linear integral operator. If  $R_0 < 1$ , then the disease free periodic solution is globally asymptotically stable and if  $R_0 > 1$ , then the disease persists. Although a regular periodic recurrence of Zika has not been observed yet, it is expected that this might be altered by the climate change. We show numerical examples to study what kind of parameter changes might lead to a periodic recurrence of Zika.