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## Mathematical Model of Zika Epidemic in Colombia

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## Mathematical Model of the Zika epidemic in Colombia

Zika virus was first found in Uganda, Africa in 1947, but it has since spread across the world, with recent outbreaks in the Americas, 2015-2016. The virus is transmitted mostly by *Aedes* mosquitoes but it is also known to be sexually transmissible. In 2016, Colombia had a Zika outbreak that spanned the country, with some municipalities having significant outbreaks, while others having little to no cases. While this may seem like any other outbreak, the scope of the outbreak is what's interesting. Instead of a huge outbreak in an isolated location as in the Zika outbreak in Puerto Rico, USA in 2017, the Zika outbreak spanning all of Colombia provides us with an opportunity to investigate whether meteorological events had a significant role in the timing, occurrence, or magnitude of the outbreak throughout its municipalities. In this poster, we employ a meteorologically driven vector-host epidemiological model to explore the role that temperature may have played in Zika transmission during the 2015-2016 outbreak in Colombia. With weekly incidence data from 1122 municipalities, we estimate model parameter values and calculate error estimates to assess model fit. We show that temperature may have influenced transmission in some municipalities; however, it is likely that other meteorological factors such as precipitation played an important role as well.