For the first time O`nyong-nyong virus (ONNV) was isolated in Gulu, the northern province of Uganda in 1959. In the language of the Acholi ethnic group the *O`nyong-nyong* means "*severe joint pain*". At that time ONNV began to spread extensively (**Fig. 1**) to Kenya, Tanzania, Zaire, Malawi and Mozambique causing two large epidemics (1959-1962 and 1996). The 1959-62 epidemic was one of the largest arbovirus outbreaks ever recorded with a spreading rate of 2-3 km/day resulting in more than 2 million cases. The first (and only) laboratory-confirmed ONNV-infected person in Europe was reported in 2013 in Germany. The symptoms of ONNV infection include fever, rash, myalgia, polyarthralgia and/or polyarthritis and are difficult to distinguish from symptoms of Chikungunya or Dengue virus infections.

The major goal of the project is to develop highly specific chemical agents which would help us to better understand the biology and the mechanism of ONN virus infection. In our work we will focus on viral serine capsid protease (CP) which is highly important in ONNV replication cycle. The developed tools will be used to elucidate the mode of action, subcellular localization and precisely dissect the function of the target enzyme as well as to verify its effect on the replication of the virus *in vitro*.

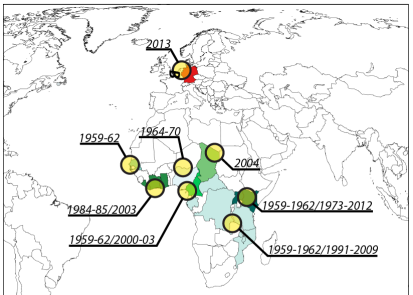

***Figure 1**. Distribution of the O`nyong-nyong virus infection.*

On the grounds of the prior studies regarding the essential role of homologues enzymes in the life cycle of other members of alphavirus genus we expect that in-depth understanding of the ONNV protease function together with development of novel tools affecting its activity may guide future research focused on the development of effective antiviral drugs, which are currently unavailable. The results of the project will allow to better understand the key steps in the ONNV replication and infection process itself. The knowledge can be important in the light of new ONNV outbreak possibility in close future.