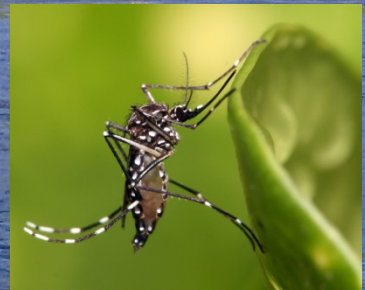
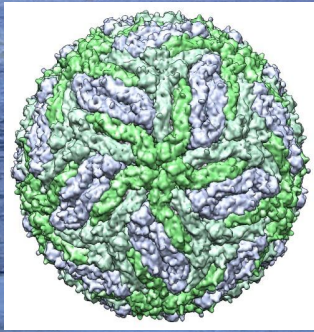


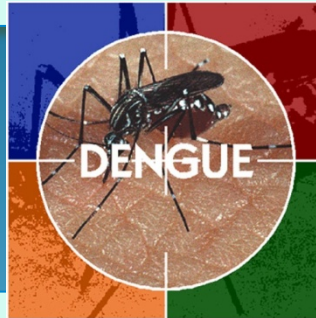
# MetaPopulation Dynamics of Dengue in French Polynesia



# MEAPOPLATON DYNAMICS OF DENGUE EPIDEMICS IN FRENCH POLYNESIA

## *Objectives:*

- Study the relationship of dengue epidemiology among islands, archipelagos
- Assess the relative roles of external seeding vs internal circulation in the sustainability of dengue in French Polynesia
- Identify key factors of dengue dynamics in French Polynesia



## *Key points :*

- Gather all the data needed
- Acquire modelling knowledge and skill
- Use metapopulation theory for dengue in French Polynesia
- Use Agent based Models to study the local dynamical system



## POPULATION AND MIGRATION DATA

Patient localization (1979-2014)

Patient age (1988-2014)

Patient gender (1979-2009)

Population Number (census and estimated)

French Polynesia, Archipelago, Islands, Townships

Airlines, boat travel frequencies

Traveler population between archipelagos, islands

Density of the population



Population in 1975:

French Polynesia:

131 311

IDV: 95062

ISLV: 16098

MARQ: 5480

AUST: 5162

TUAM: 8190

GAMB: 560

Population in 2013

French Polynesia:

269 993

IDV: 202140

ISLV: 34911

MARQ: 9392

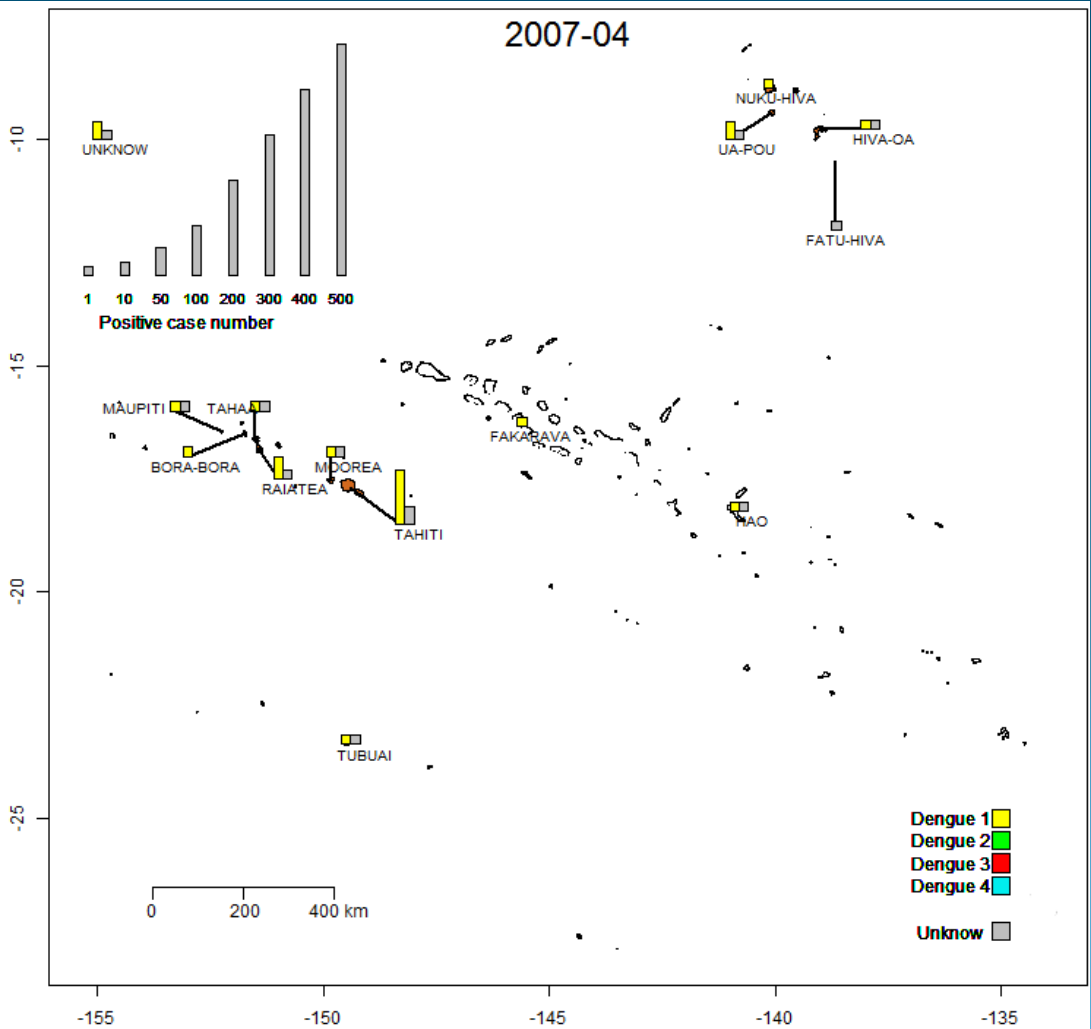
AUST: 6946

TUAM: 15189

GAMB: 1437

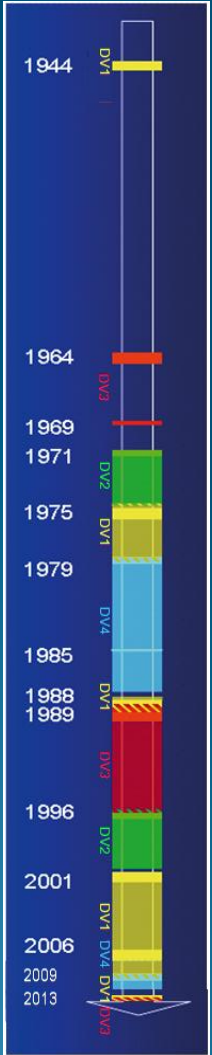


# DENGUE DATA



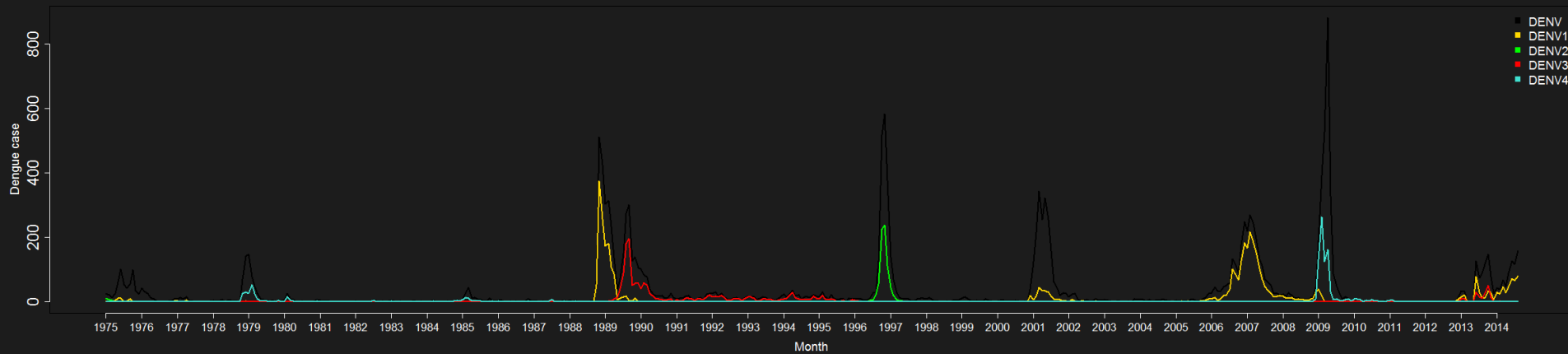
1975 to 10/2014:  
 Dengue case Number:

DENV: 17240  
 DENV-1: 4224  
 DENV-2: 768  
 DENV-3: 1679  
 DENV-4: 1134



# DENGUE IN FRENCH POLYNESIA

Dengue case by month in French Polynesia from 1975 to 2014

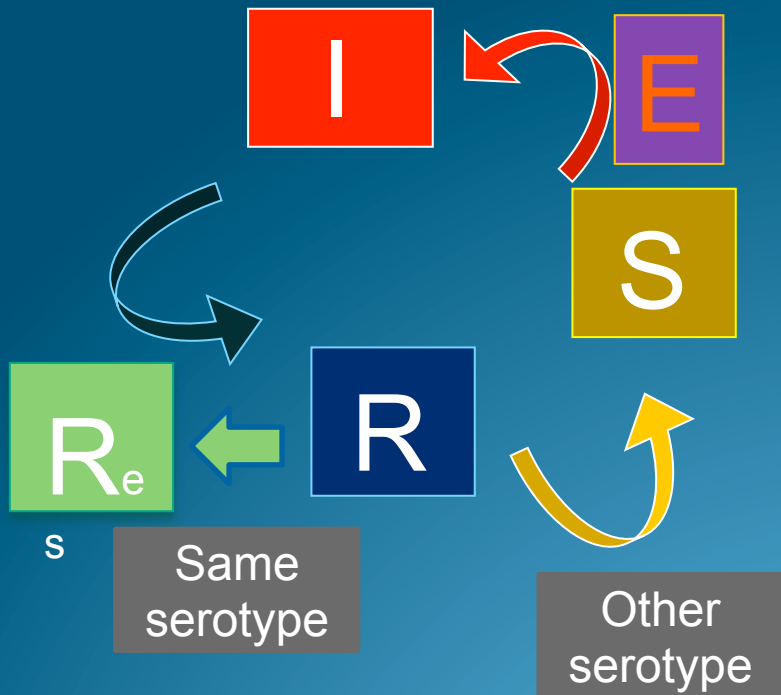


## Dengue case in French Polynesia from 1975 to 2014 by Month

$y = \text{Dengue case number}$   
 $x = \text{Month}$

■ DENV  
■ DENV1  
■ DENV2  
■ DENV3  
■ DENV4

# MODELING





**Thank you for  
your attention**

Dengue case by month in French Polynesia from 1975 to 2014

