

# ***Génomique des arbovirus zoonotiques: état des lieux***

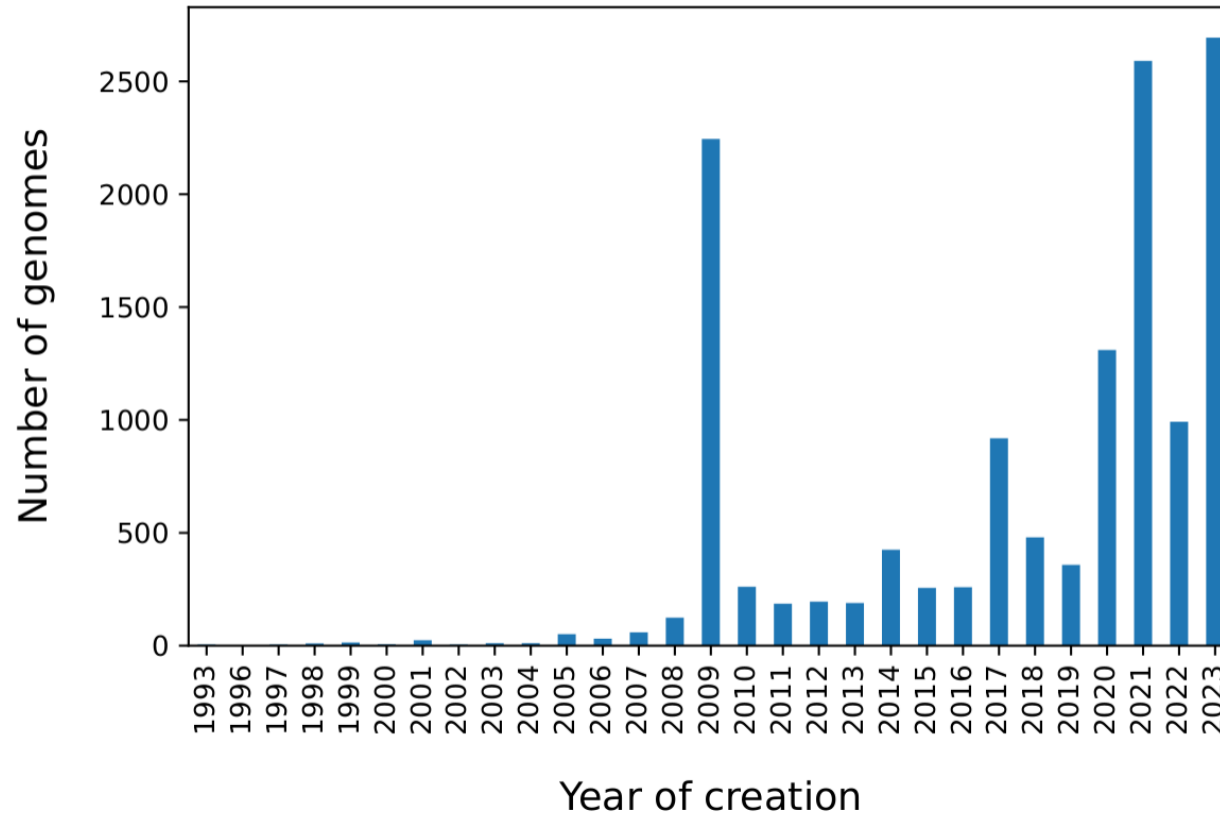
Raphaëlle Klitting

*Centre National de Référence des Arbovirus - Unité des Virus Émergents  
UMR IRD 190, Inserm 1207*

Aix-Marseille Université – Institut de Recherche pour le Développement –  
Institut National de la Santé et de la Recherche Médicale – Institut de Recherche Biomédicale des  
Armées – Établissement Français du Sang

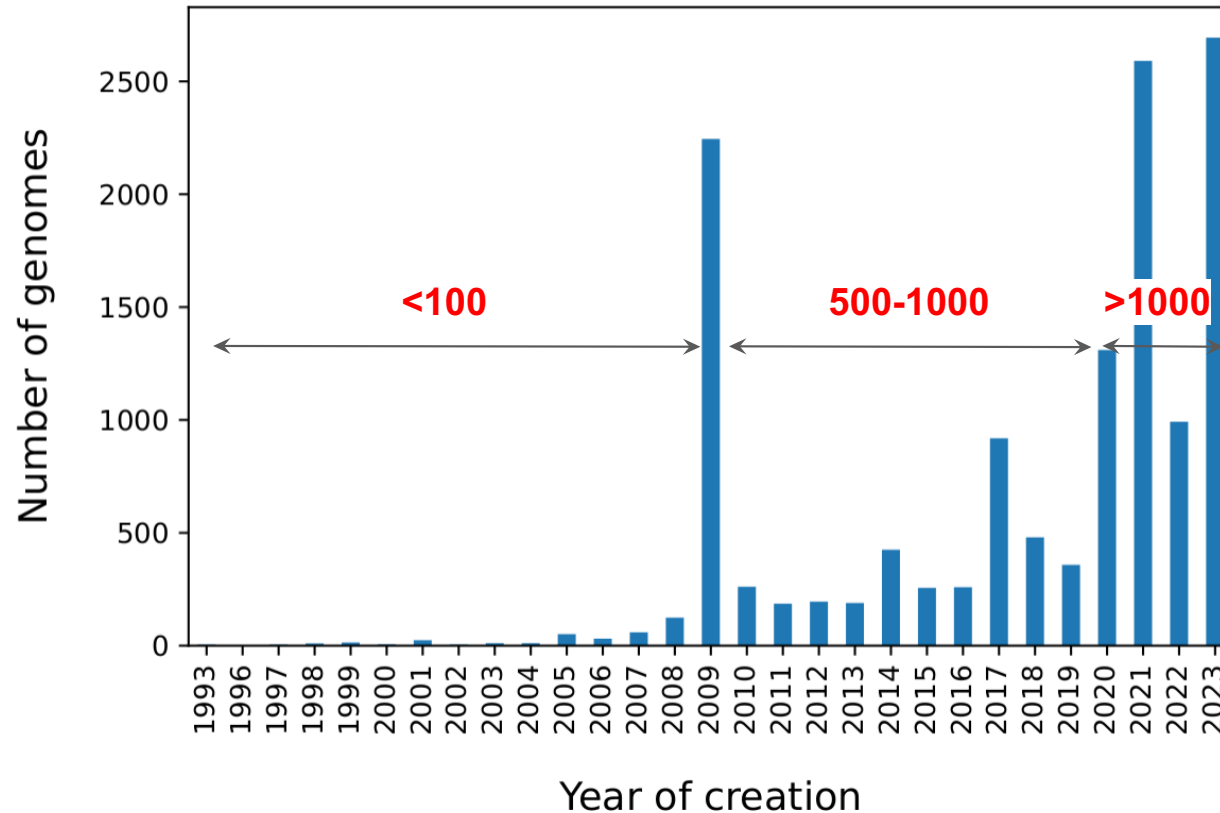
# Evolution de la production dans le temps: DENV

DENV genomes production over time



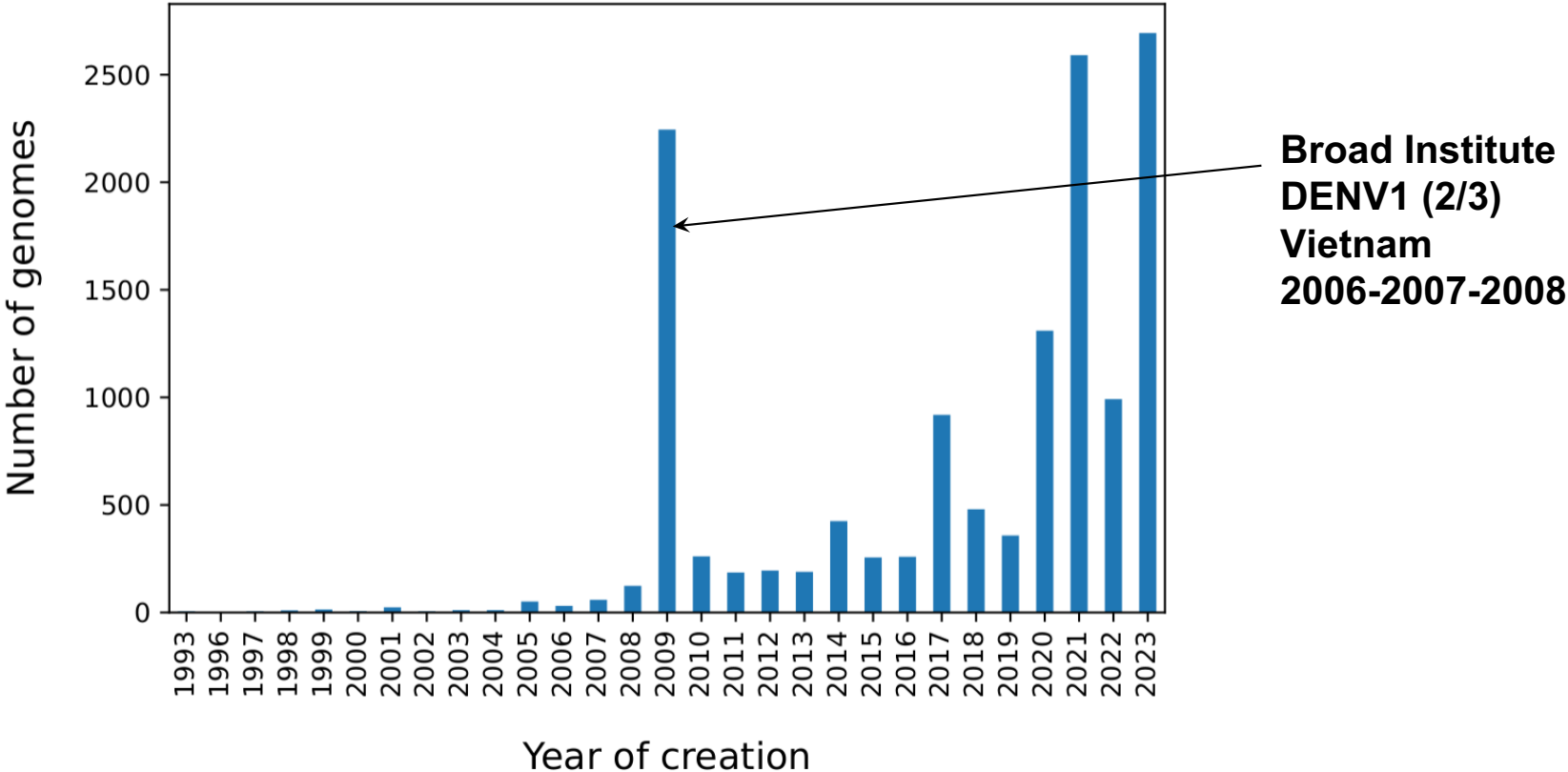
# Evolution de la production dans le temps: DENV

DENV genomes production over time



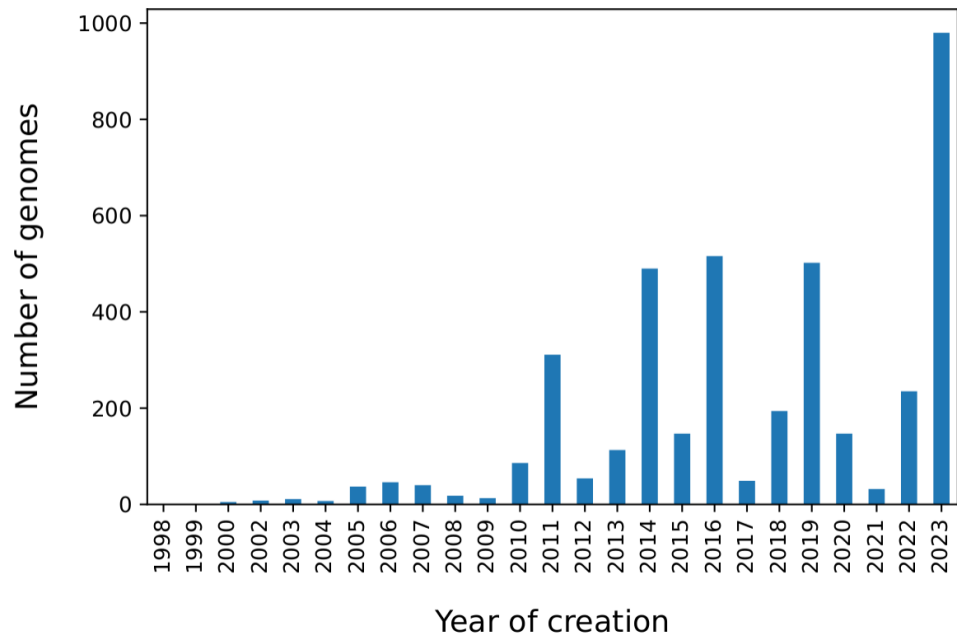
# Production dans le temps: DENV

DENV genomes production over time

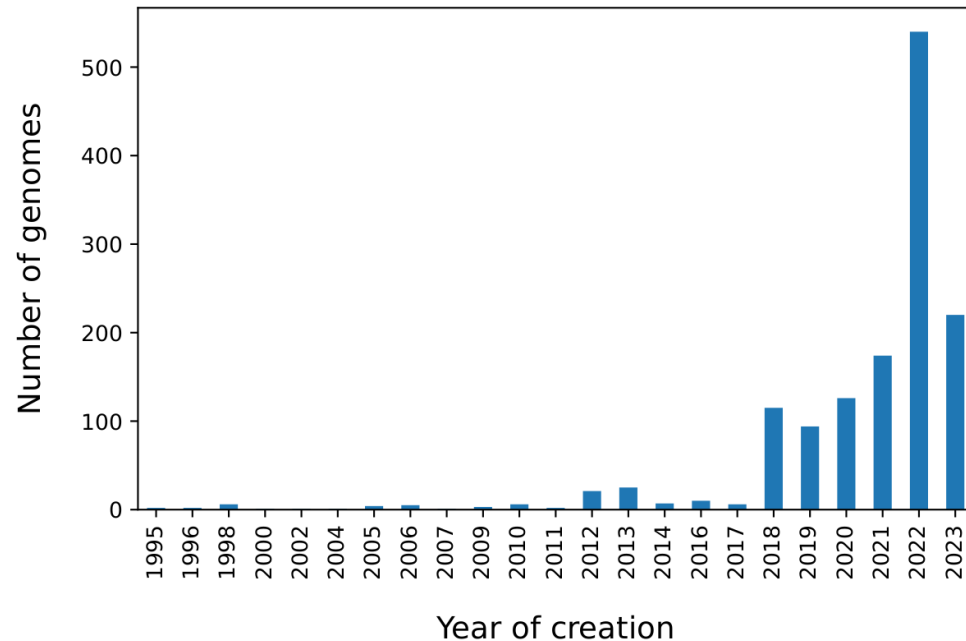


# Production dans le temps: autres flavivirus

## WNV genomes production over time

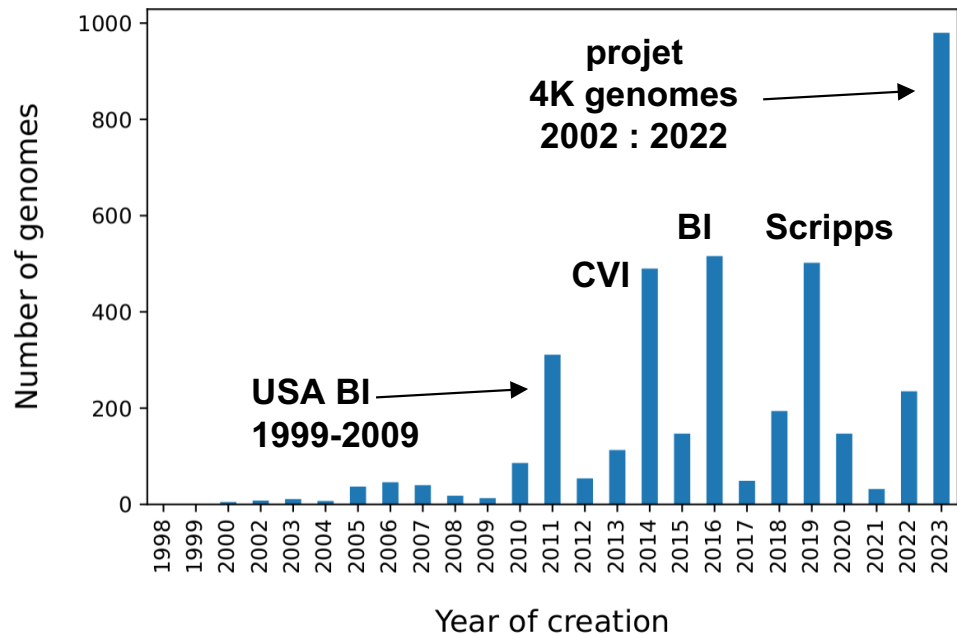


## YFV genomes production over time

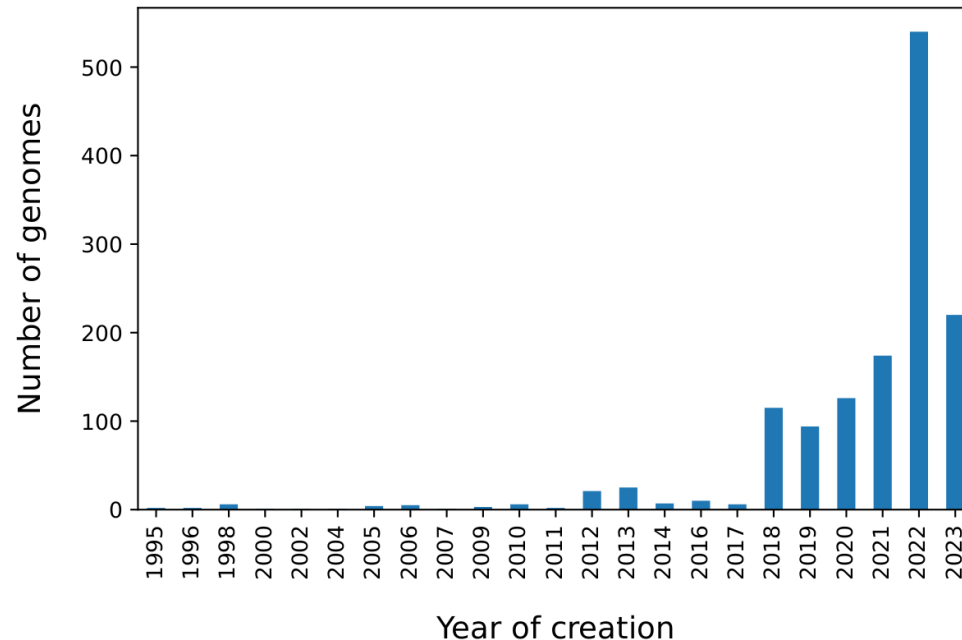


# Production dans le temps: autres flavivirus

WNV genomes production over time

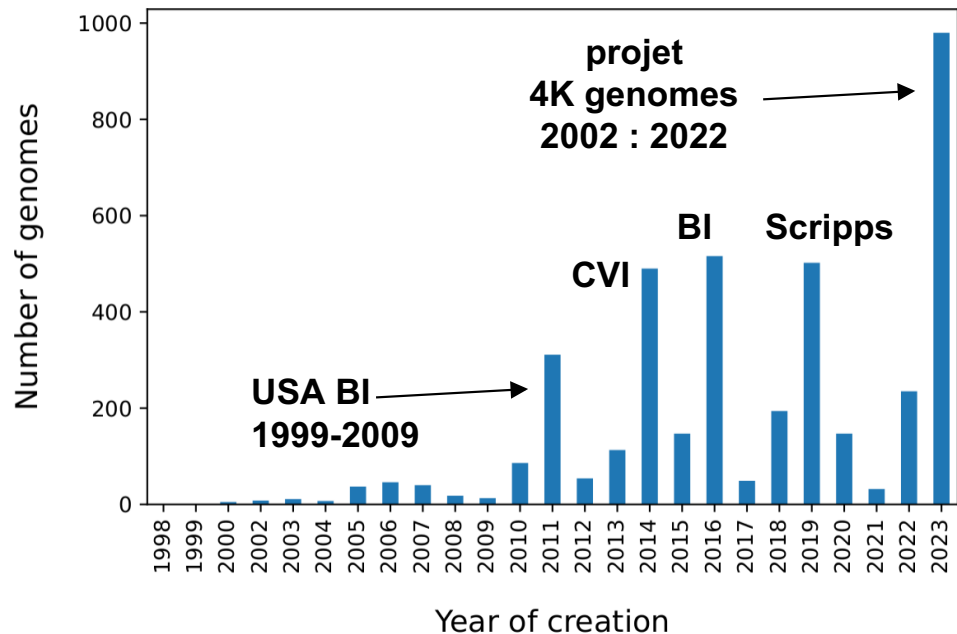


YFV genomes production over time

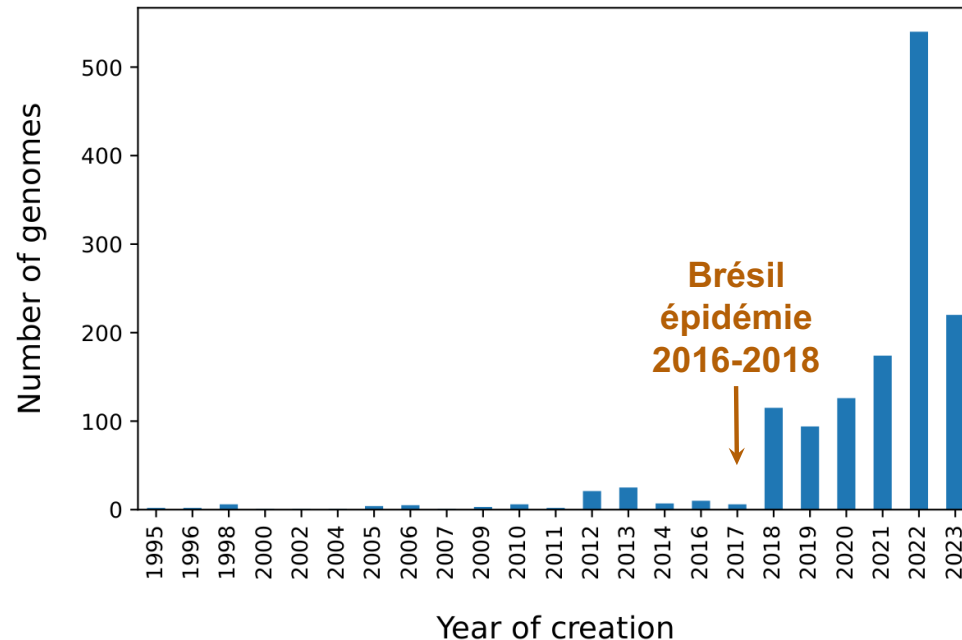


# Production dans le temps: autres flavivirus

WNV genomes production over time

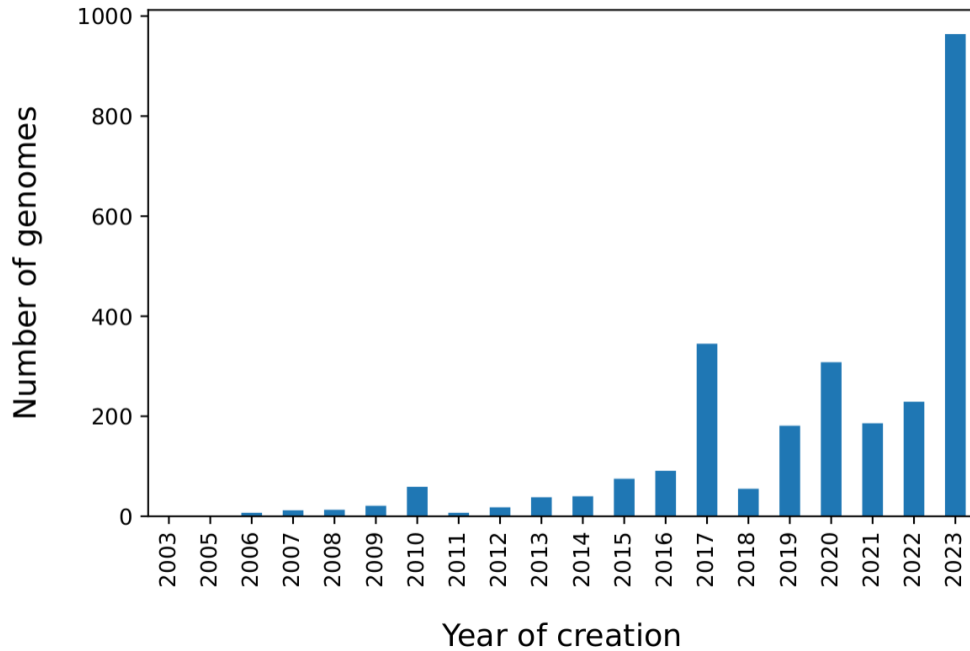


YFV genomes production over time

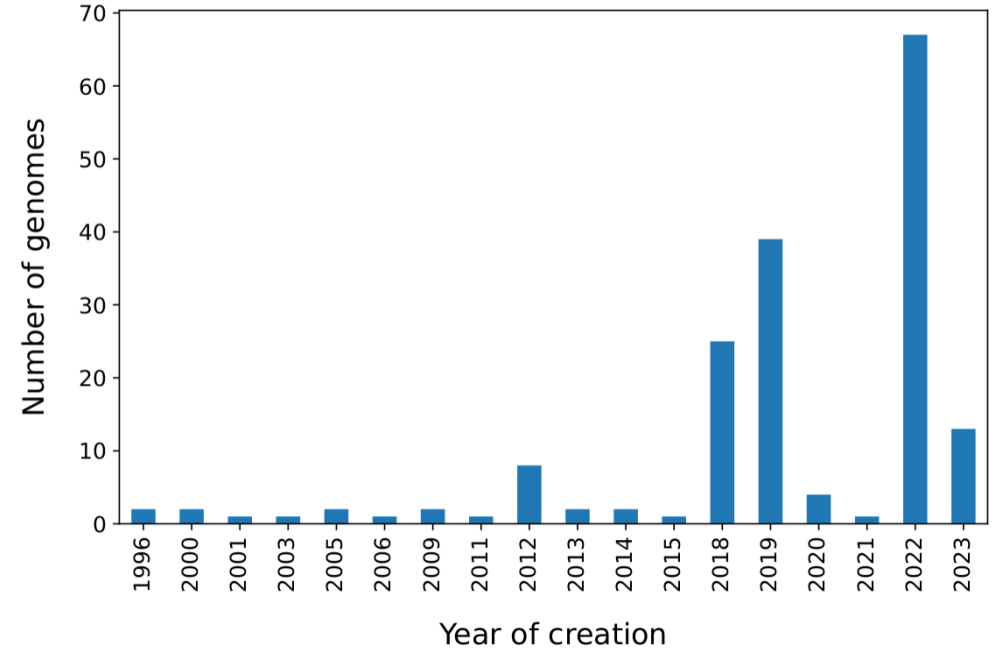


# Production dans le temps: alphavirus

CHIKV genomes production over time



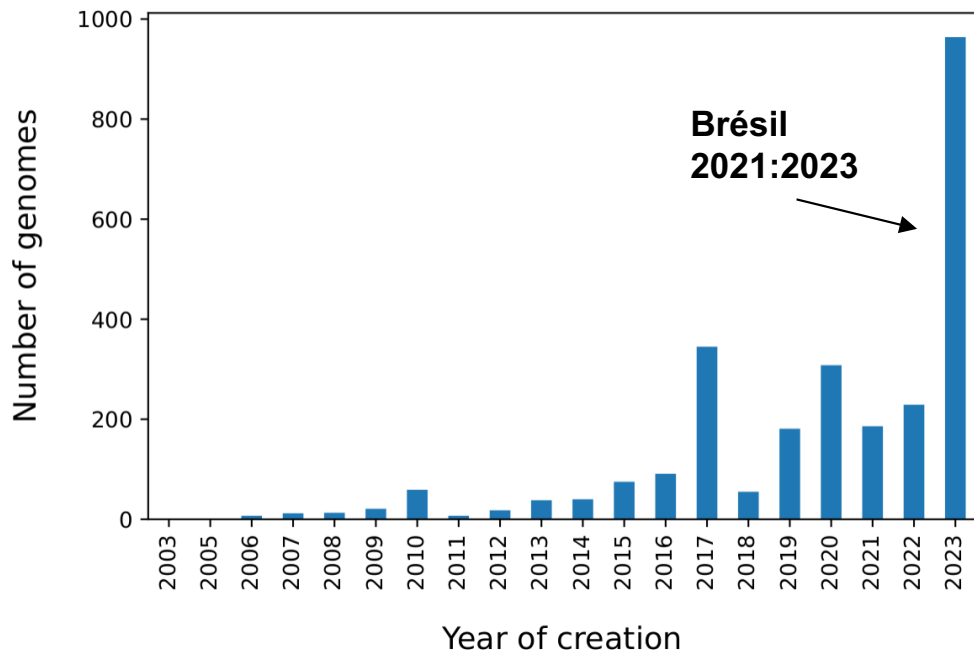
SINV genomes production over time



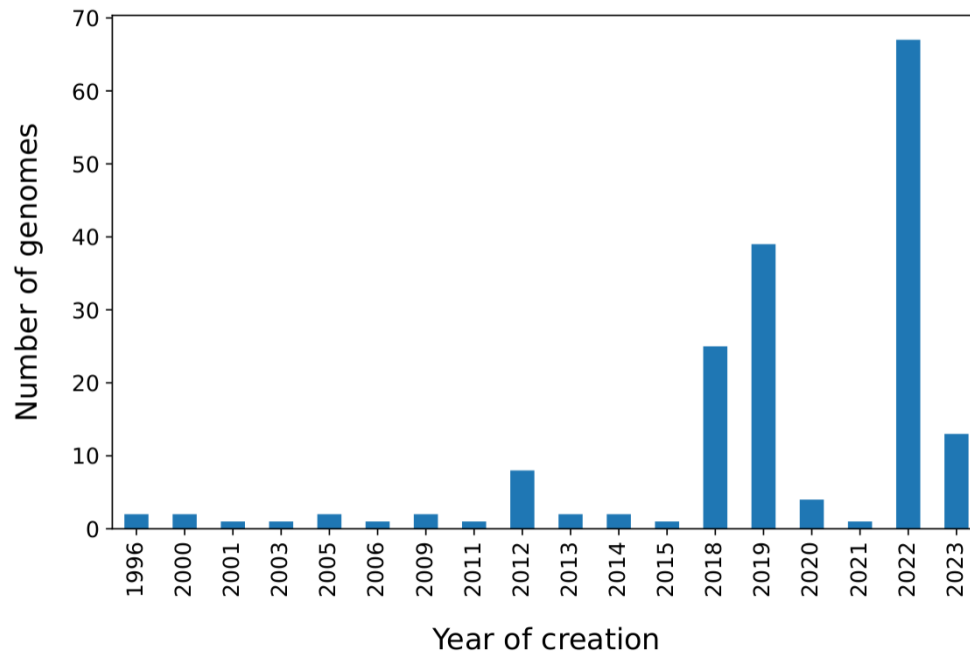


# Production dans le temps: alphavirus

CHIKV genomes production over time

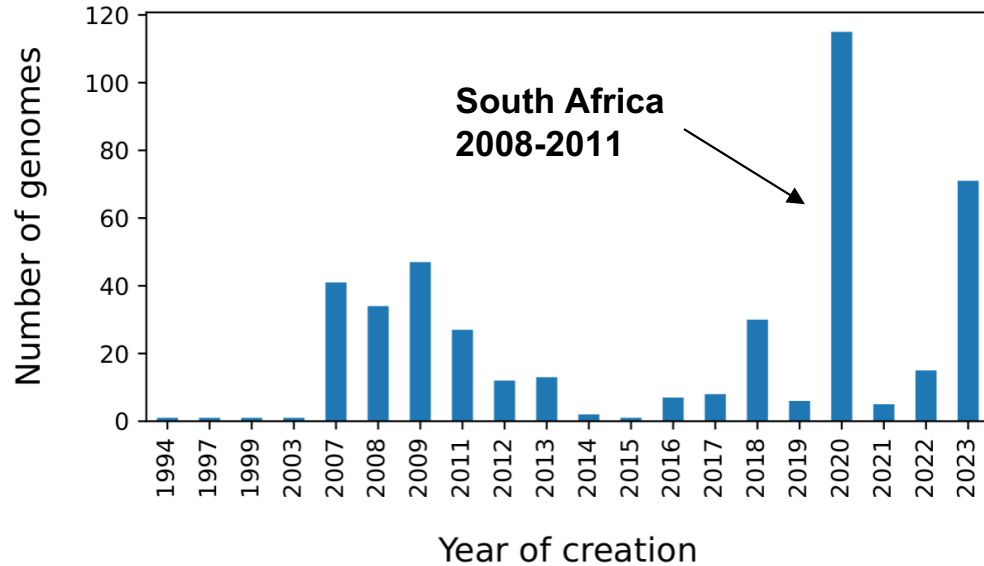


SINV genomes production over time

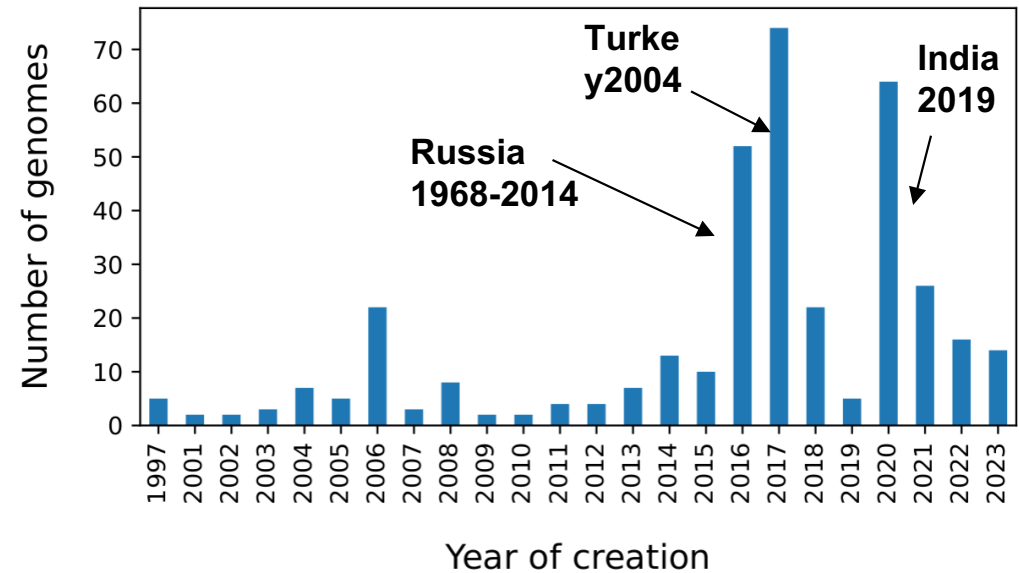


# Production dans le temps: bunyas

RVFV genomes production over time

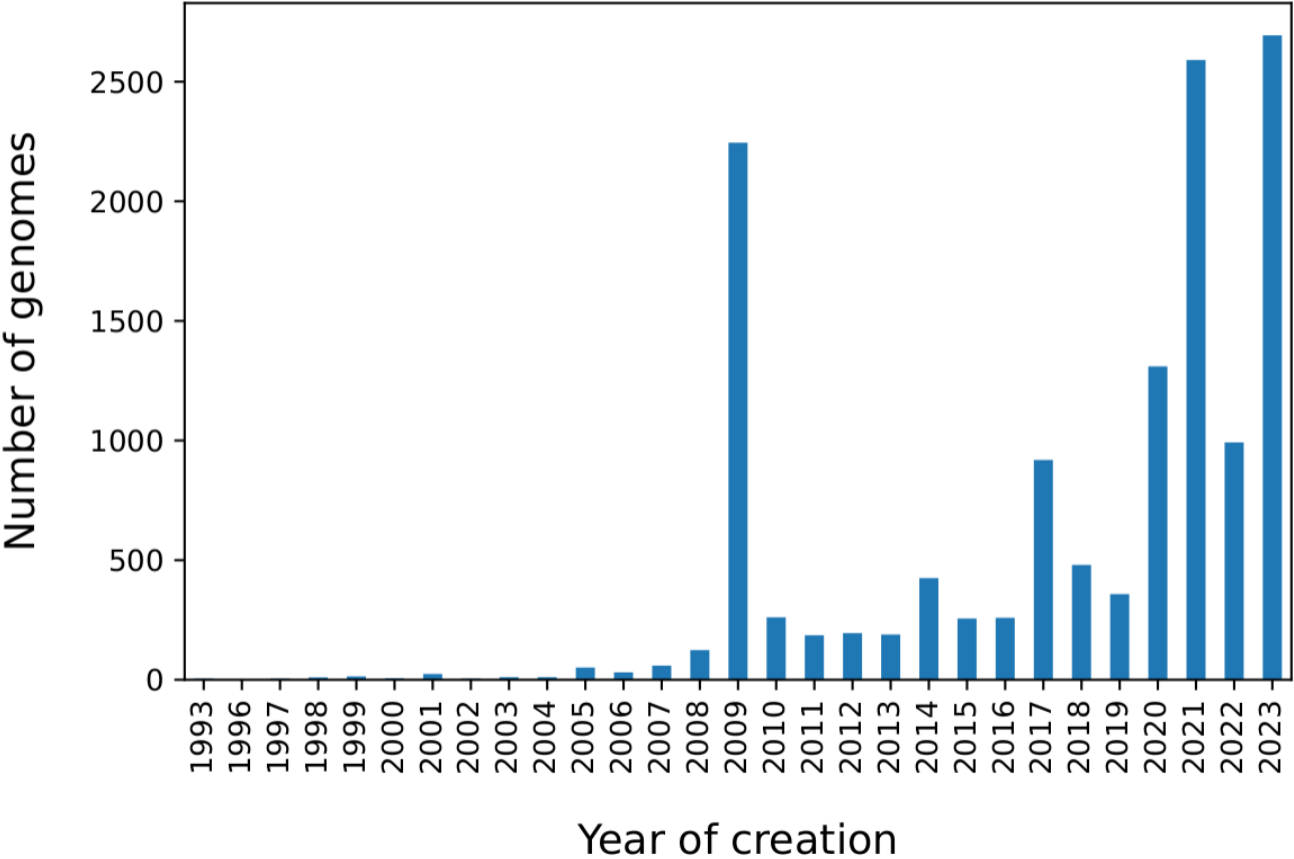


CCHFV genomes production over time



# Quel bilan global ?

DENV genomes production over time

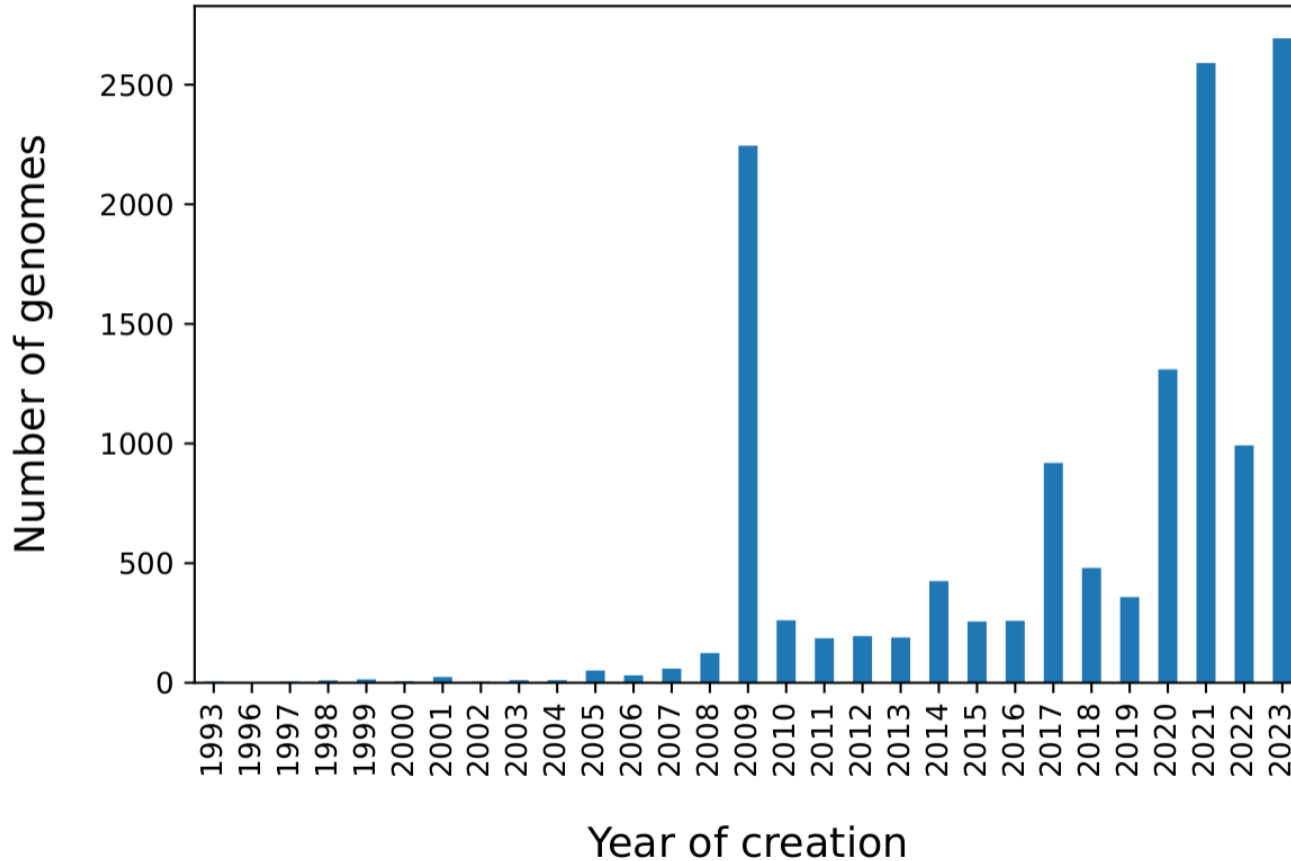


DENV

~13 700

# Quel bilan global ?

DENV genomes production over time

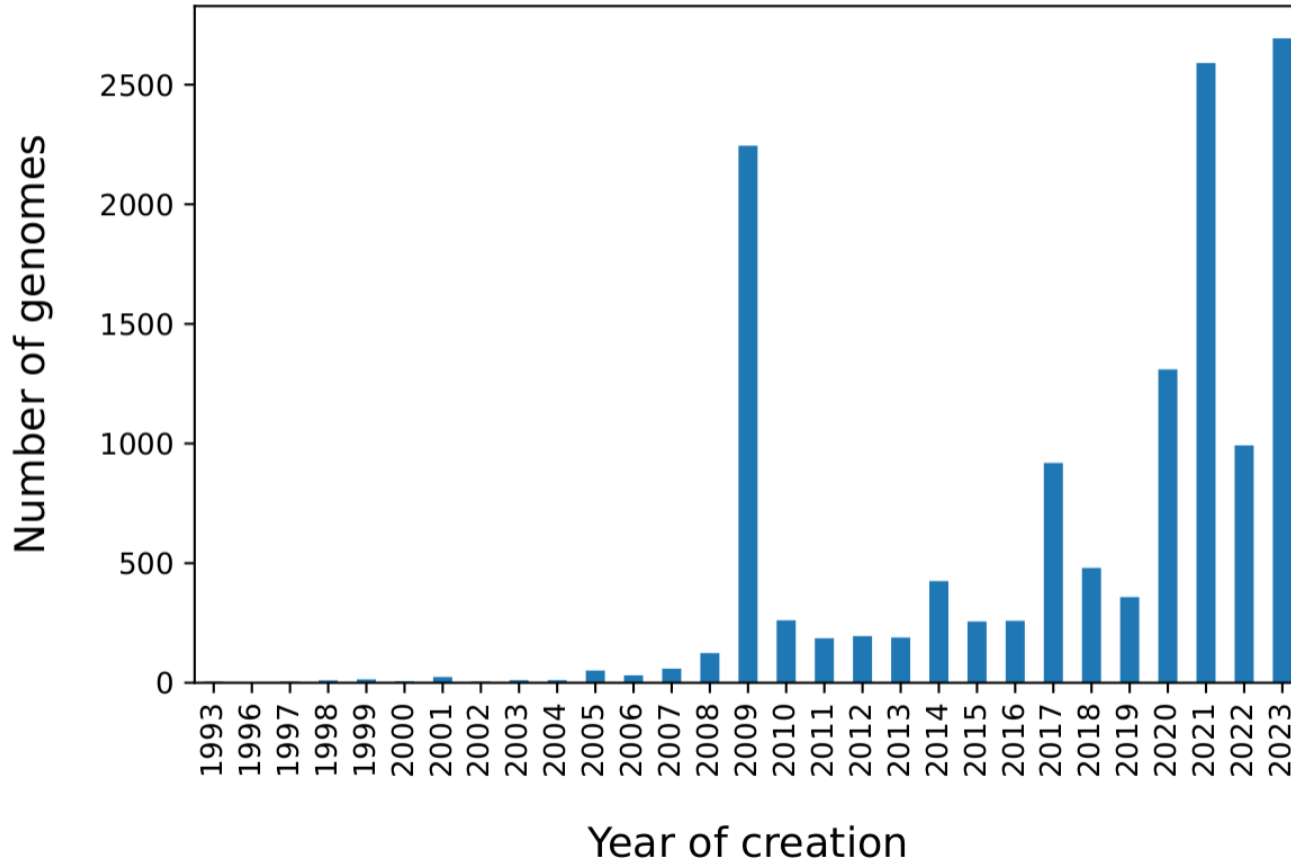


DENV ~13 700

SARS-CoV-2 ~16 300 000

# Quel bilan global ?

DENV genomes production over time



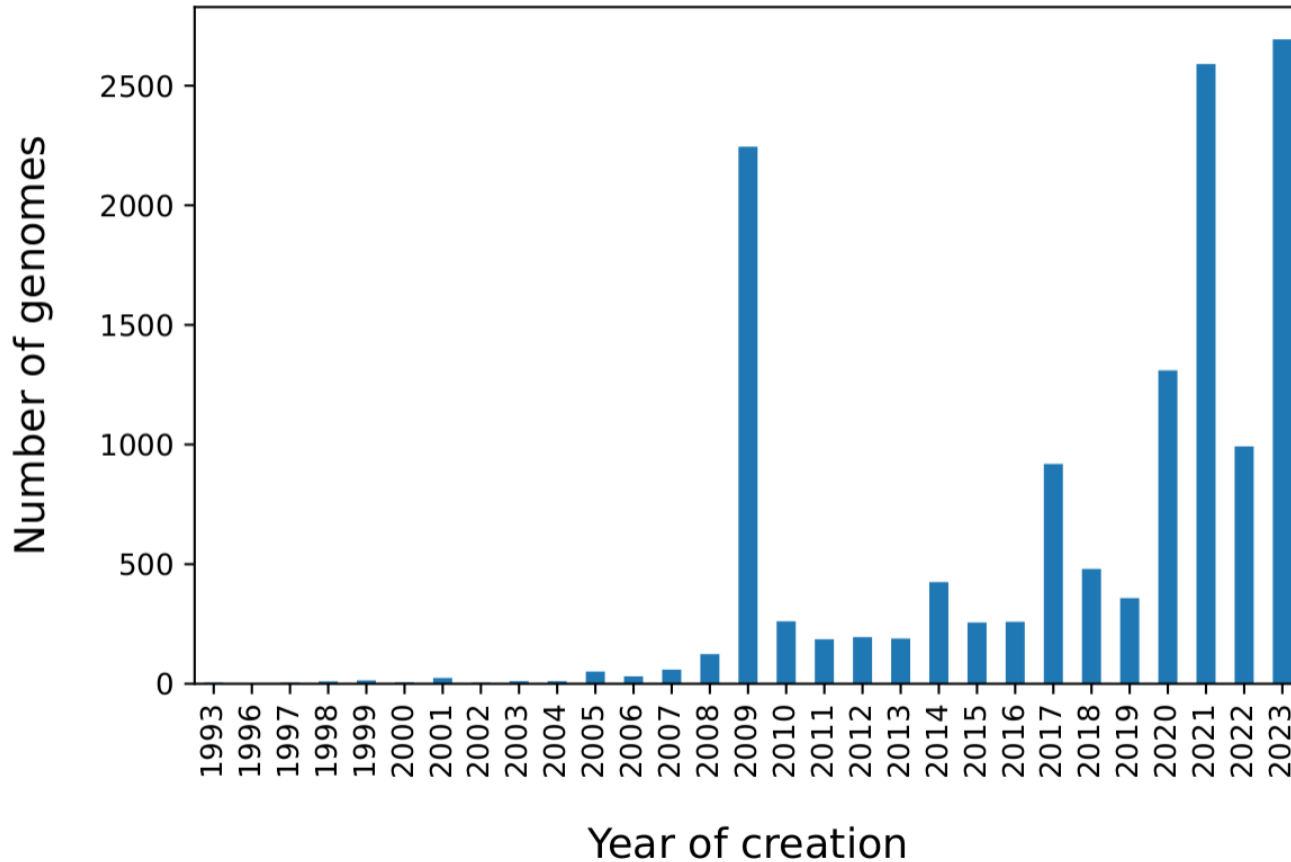
DENV ~13 700

SARS-CoV-2 ~16 300 000

**~800M conf. cases - 4 y**

# Quel bilan global ?

DENV genomes production over time



DENV ~13 700

**~800M cases - 8 y**

SARS-CoV-2 ~16 300 000

**~800M conf. cases - 4 y**

# Quelle est notre degré de connaissance de la diversité circulante ?

<i>Virus</i>	<i>Public Genomes (near-complete)</i>
YFV	1 372
DENV	13 717
WNV	4 043
CHIKV	2 651
SINV	319
CCHFV	881
RVFV	1 017

# Quelle est notre degré de connaissance de la diversité circulante ?

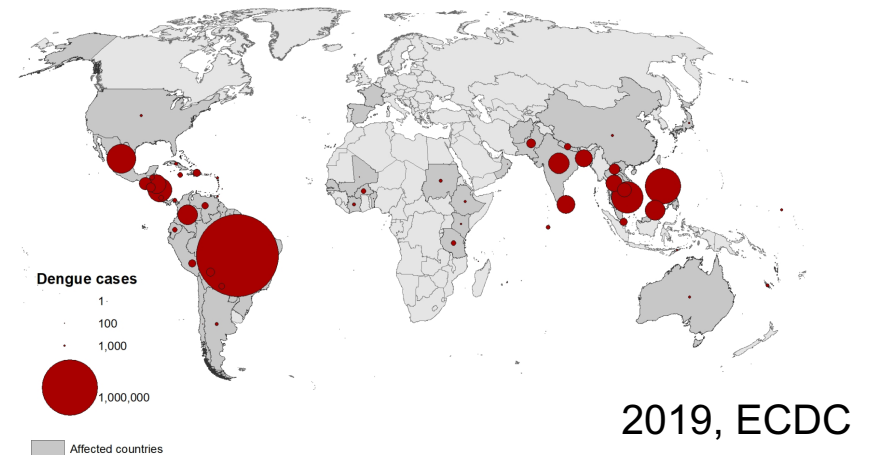
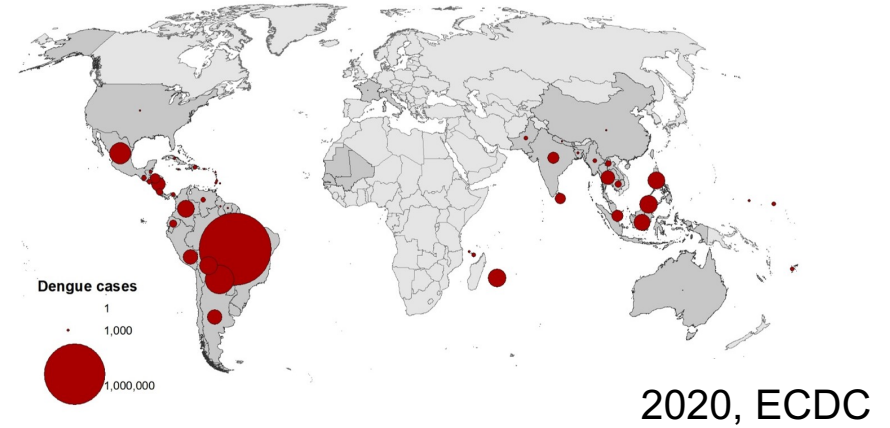
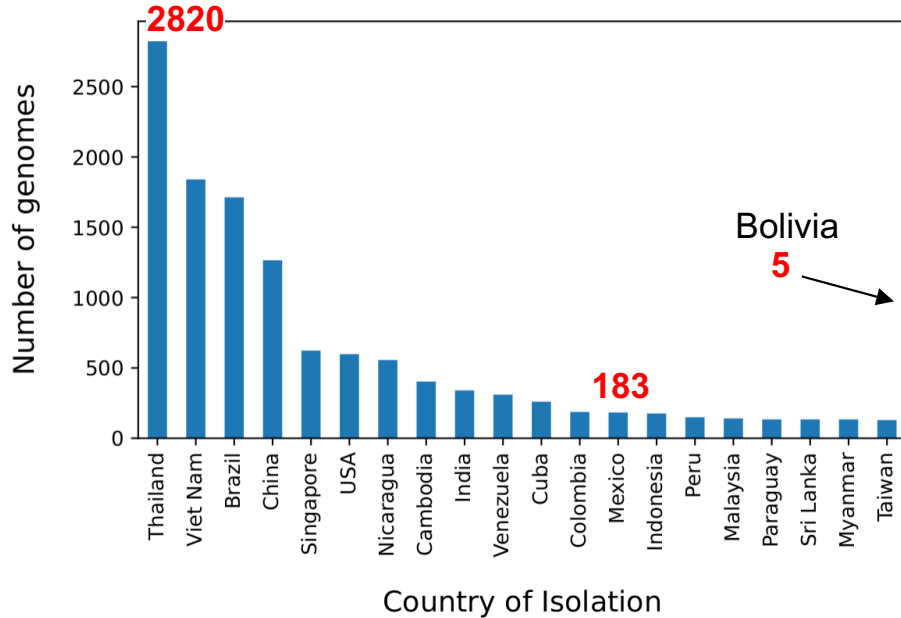
<i>Virus</i>	<i>Public Genomes (near-complete)</i>	<i>Yearly cases</i>	<i>~Sampling</i>
YFV	1 372	130 000	0.1%
DENV	13 717	96 000 000	0.001%
CHIKV	2 651	693 000	0.03%
JEV	481	42 500	0.1 %

Estimated/reported case numbers from  
Franklinos et al. Lancet Inf. Dis. 2019



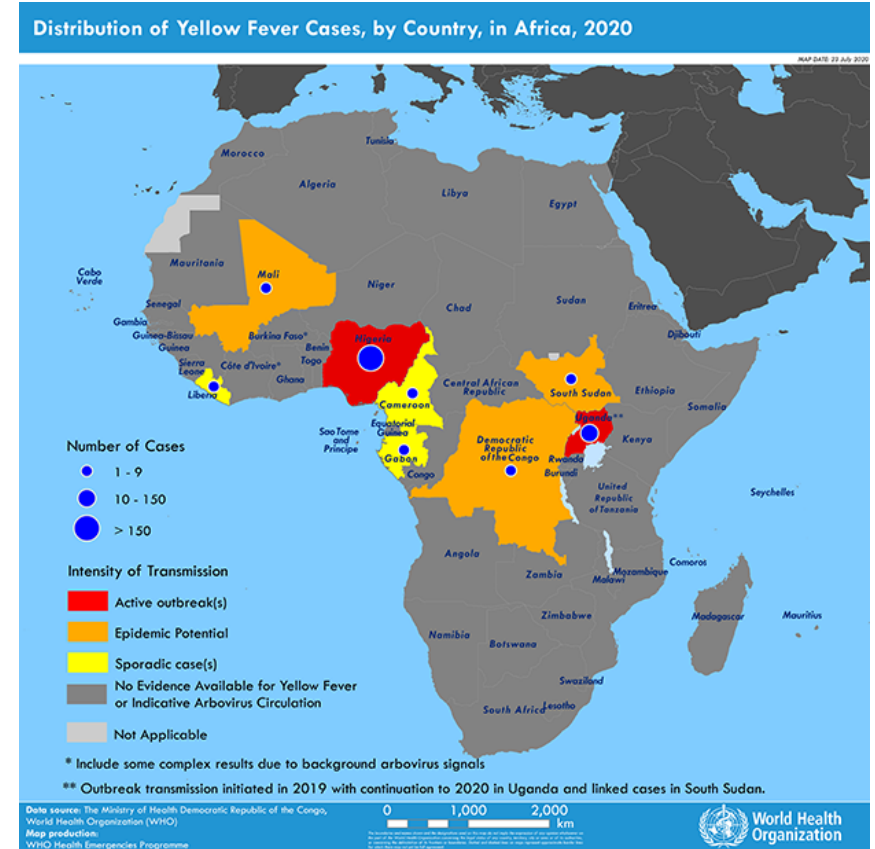
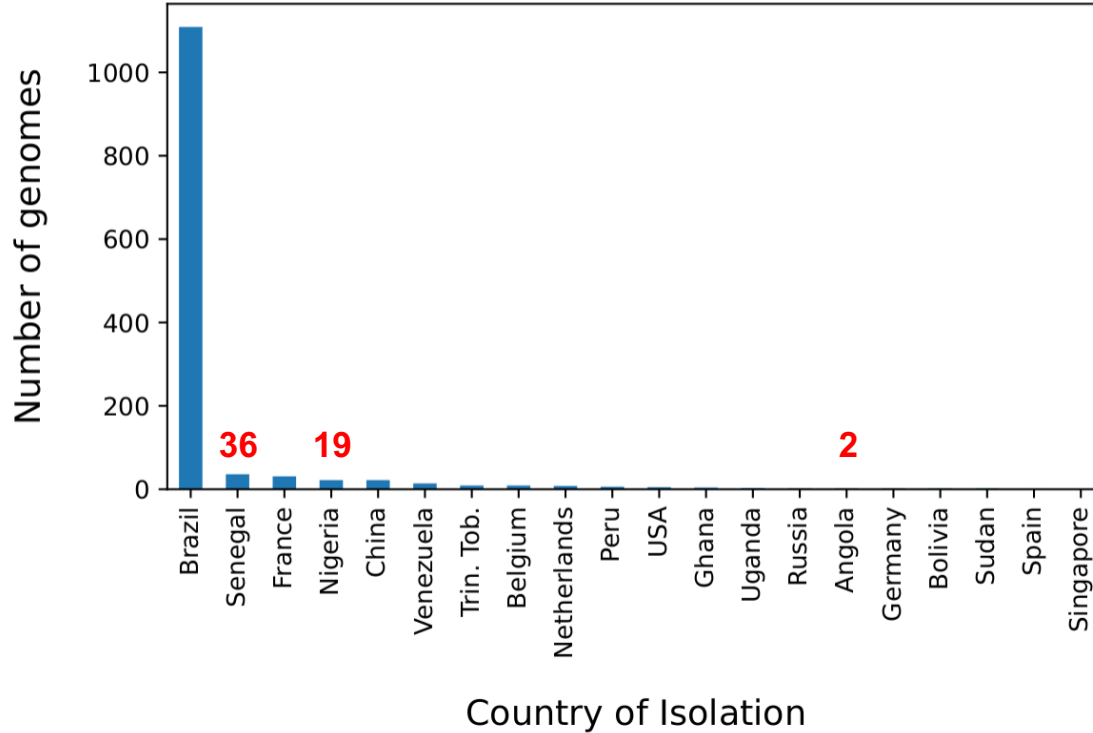
# Ces données sont elles (1) homogènes ? (2) représentatives ?

DENV genomes isolated per country

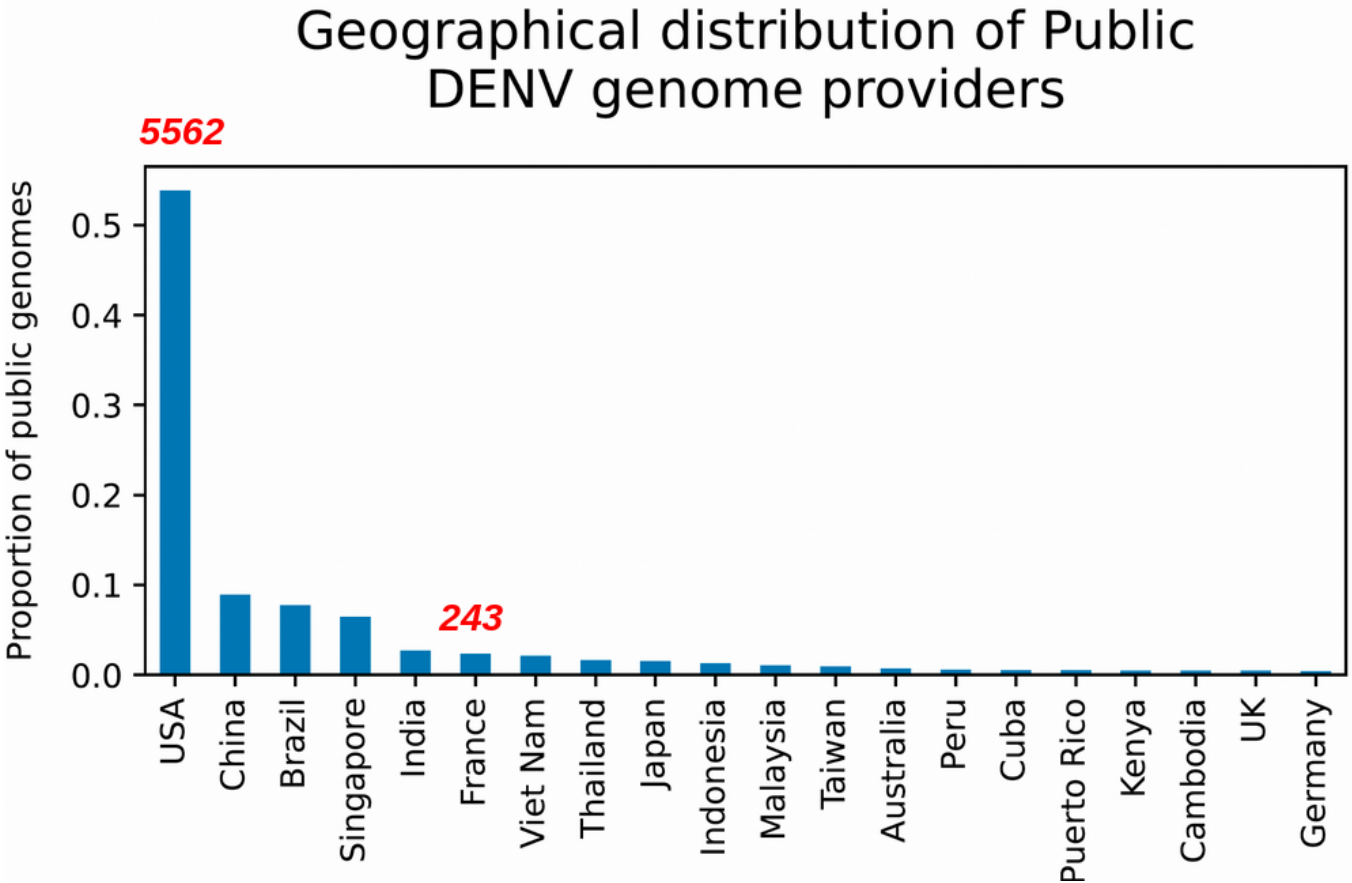


# Ces données sont elles (1) homogènes ? (2) représentatives ?

YFV genomes isolated per country



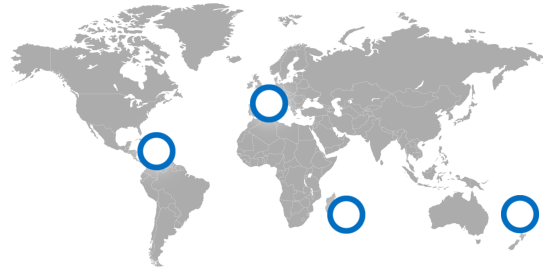
# Qui produit ces données ?



# Et maintenant ?

- Augmentation conséquente des capacités de séquençage depuis 2020
- Améliorer l'échantillonnage
  - dans sa globalité
  - sur les “angles morts”
- Amélioration du “contexte” des données
- Gouvernance

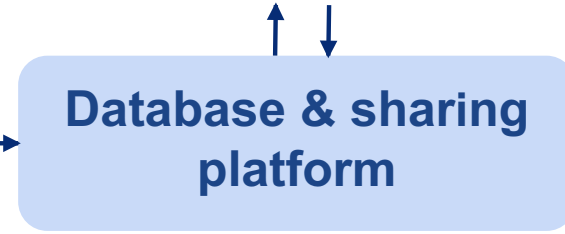
# ARBOGEN - LSDengue



**Trans-territorial network of public and private partners**



**Public Databases**



○  
**High-quality data**

○  
**Analysis tools**

**Tracking DENV circulating diversity**



*Adapting diagnostic, treatment and immunisation methods*

*Fundamental research*

**Support research**

**Inform**

Public Health

**Engage users**

