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## **On the tracks of Neandertals: The contribution of an experimental analysis on footprints to the knowledge of the biological features of the Rozel hominins**

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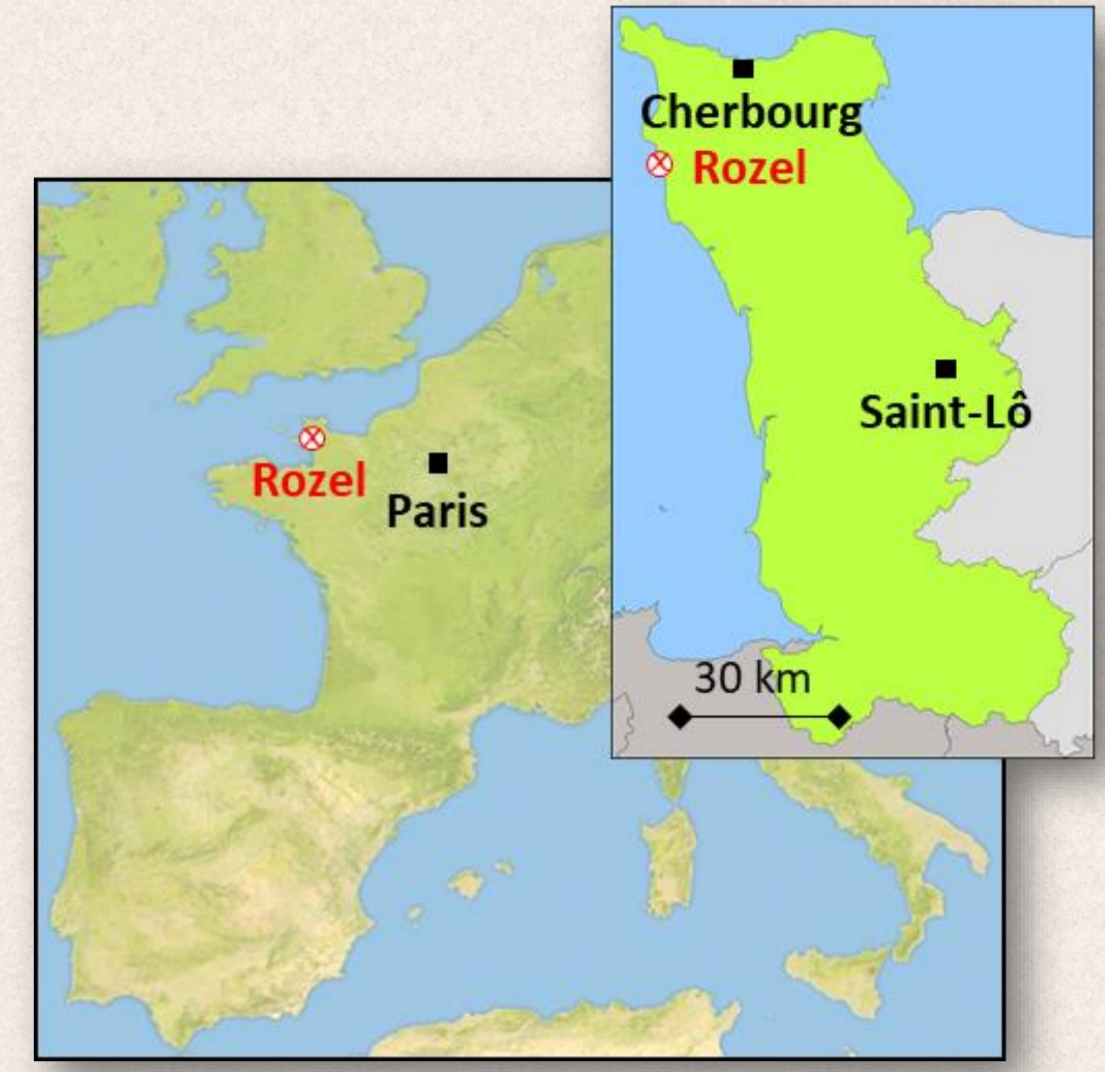
5<sup>th</sup> Young Natural History scientists Meeting (6<sup>th</sup>-10<sup>th</sup> March 2018)



The site of Rozel (Photo : J. Duveau)

Since 2012, about 300 hominin footprints have been discovered from the site of Rozel (Normandy, France). The archaeological material and the chronostratigraphic context (Mercier *et al.*, 2018) associated to these footprints allowed to attribute them to Neandertals. The first studies dealing about these footprints highlighted the necessity to understand the impact of the paleodune substrate on the footprints' morphology using the recent development of experimental studies.

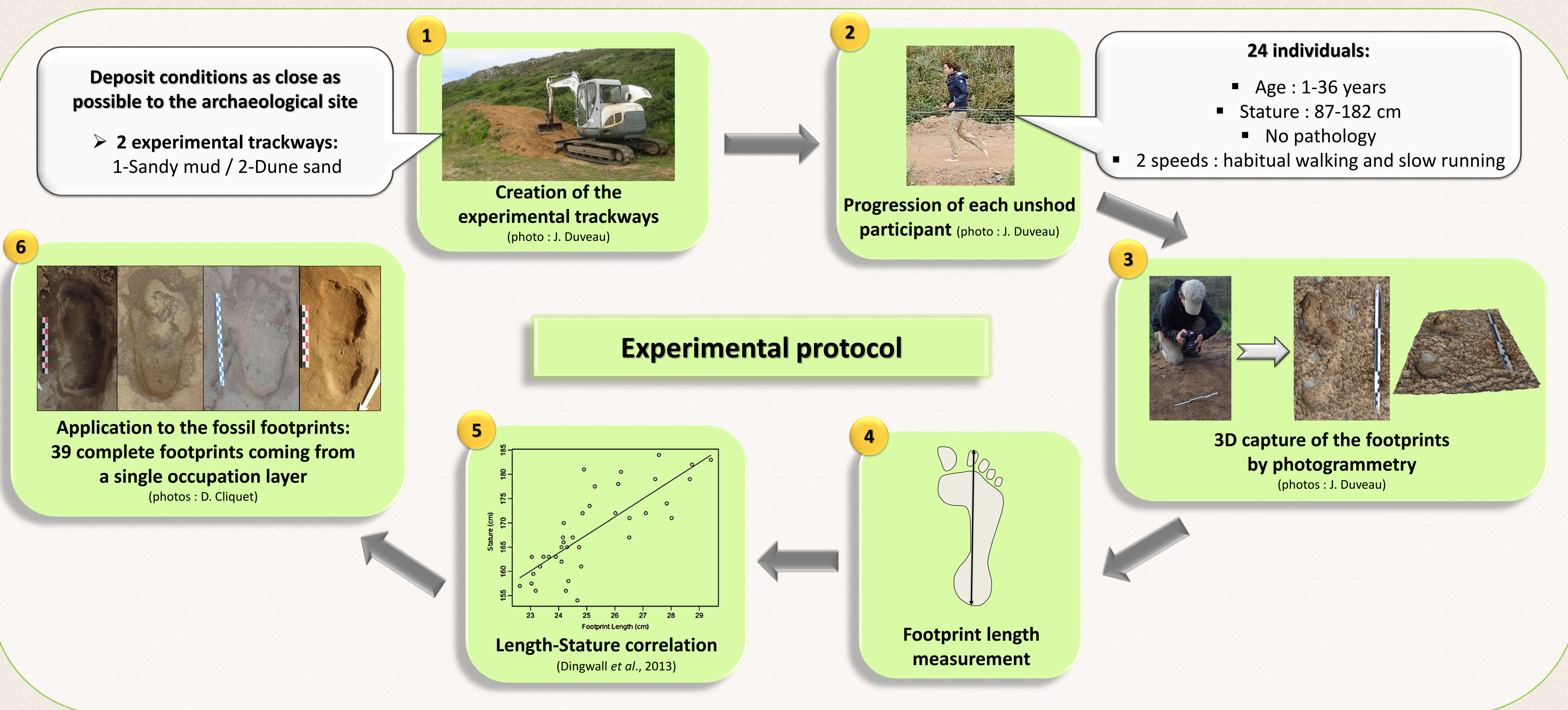
We report here the first experimental analysis about these footprints in order to better understand the biology of the individuals who lived at Rozel 80 000 years ago.



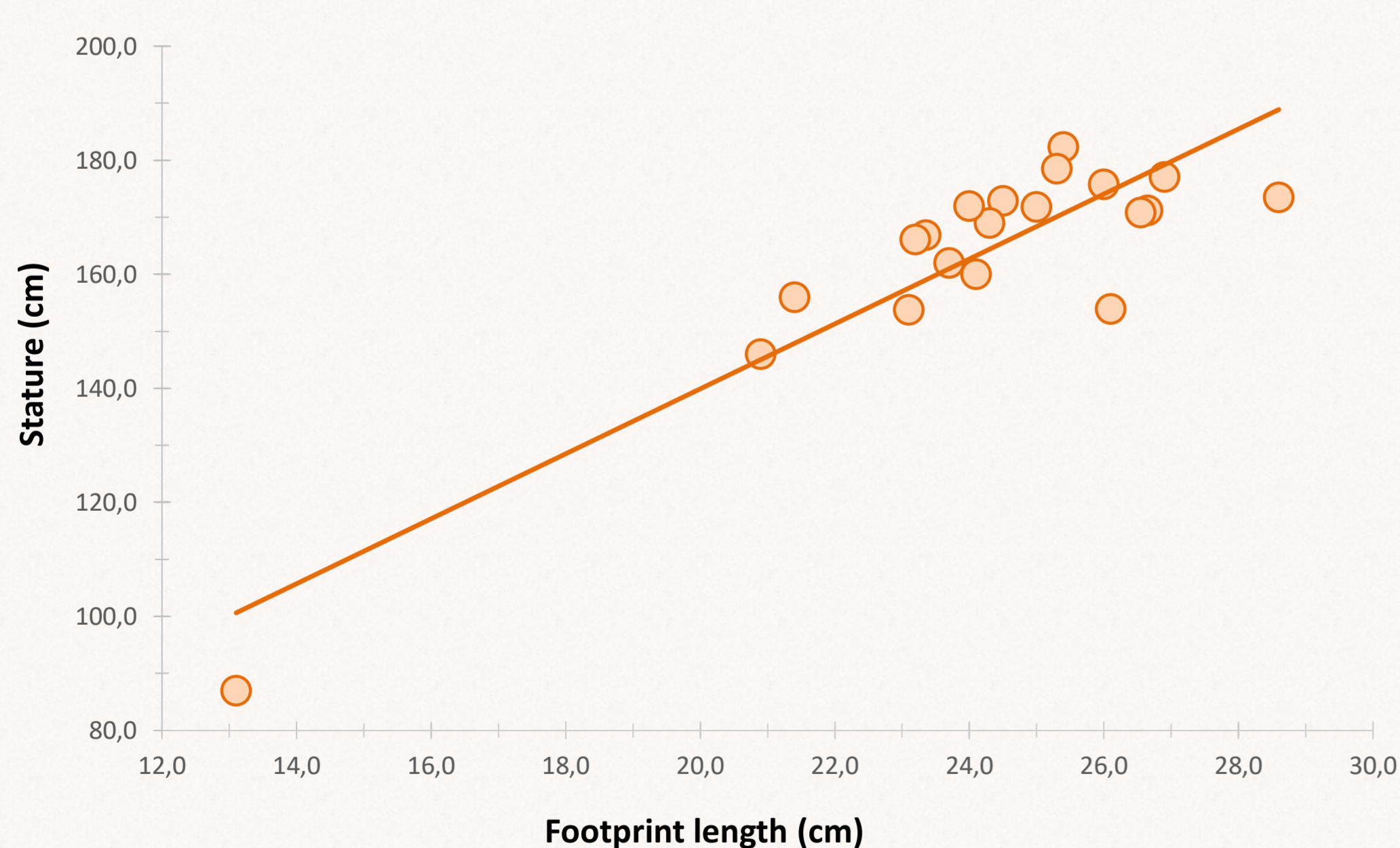
## Issue & Aim

What is the relationship between the footprint length and the stature of each individual?

➤ Estimates of statures from the lengths of the Rozel footprints



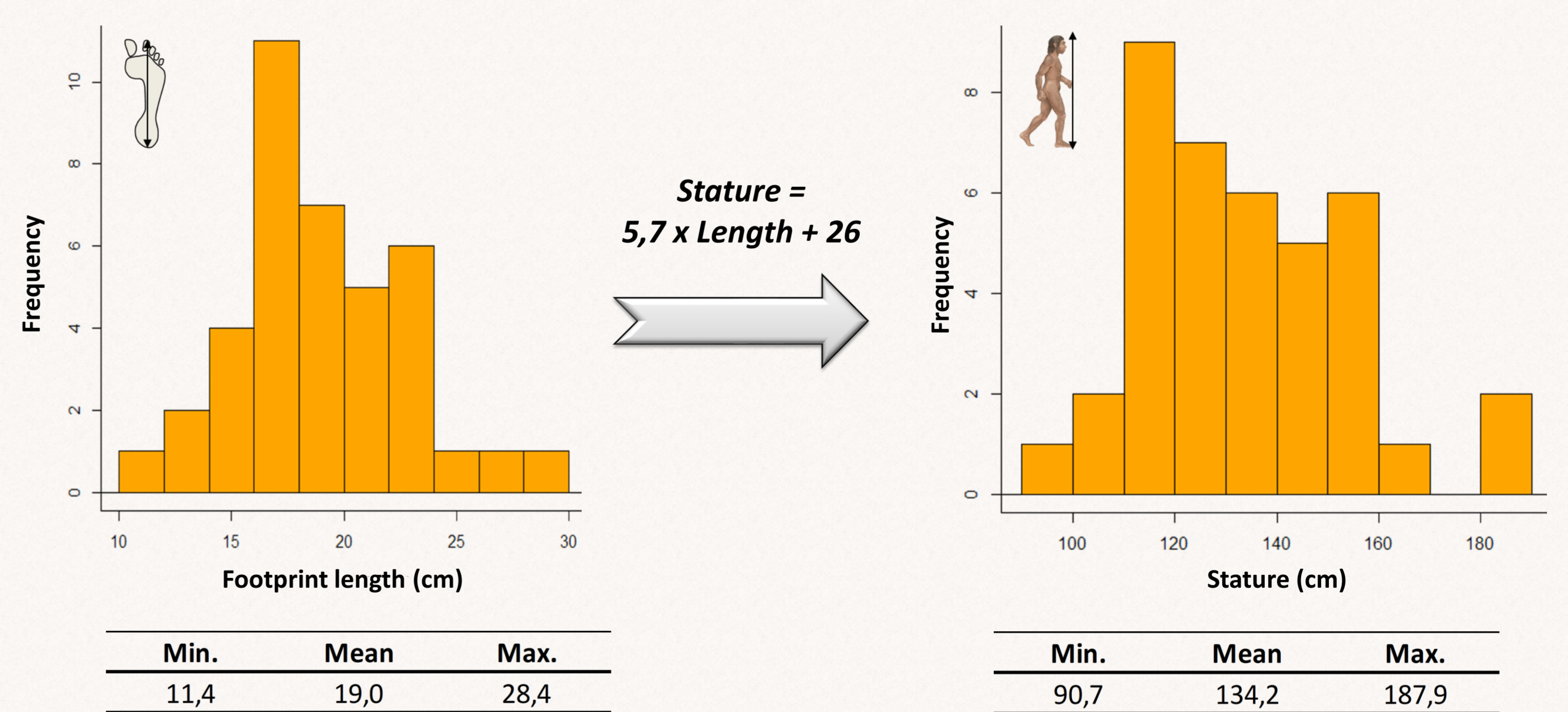
## From footprint length to stature



$$\text{Stature} = 5,7 \times \text{Length} + 26$$

$$r^2 = 0,8$$

## Application to the fossil footprints



This first experimental study allowed to obtain some information on the biology of a group which lived at Rozel 80 000 years ago. The important range of statures could reflect the presence of several individuals with different age class.

However, we must weight these interpretations because these regressions and estimates are based on the anatomically modern humans and don't consider the Neandertal anatomical features. Nevertheless, this method is currently the most accurate to obtain biological information from the Rozel footprints' morphology.



Neandertal reconstruction (left) next to a modern human skeleton (Sawyer et Maley, 2005)

## References

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