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# A spatio-temporal approach to group size and length of occupation at PTK and FLK Zinj (Bed I, Olduvai Gorge) using regression estimates from modern foragers

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## Résumé

Discrete single-layered sites present us with the challenge of determining how much time and how many hominins were involved in their formation. Being able to retrieve this type of information from archaeological data will allow for a better understanding of the functionality of sites and of the structural socio-reproductive behavior of early humans. In the case of the early Pleistocene sites FLK Zinj and PTK, which are interpreted as central places formed as the result of the accumulation of carcasses that were accessed by hominins prior to carnivores, it will furthermore serve to establish whether the carcasses consumed at these sites were an important part of hominin diet or if meat was eaten intermittently along extensive periods of time. Site occupation times and group size are addressed in this work through the application to the site of PTK of a combination of regression formulas and estimates derived from spatial measurements and spatial properties from several !Kung hunter-gatherer campsites studied by Yellen (1977), who discovered that the time during which a campsite was occupied and the number of occupants had a measurable impact on the spatial dimensions of sites. Results obtained for PTK are compared to estimates that have been calculated for FLK Zinj (Domínguez-Rodrigo et al., submitted). Through this work we seek to develop working hypotheses, approaches, and analytical tools to be further tested and used in the future in combination with analyses on seasonality and analyses on sedimentation processes including estimations of the potential effect of subaerial exposure in the form of weathering on fossil bones. This critical application of the regression parameters from modern foragers to early Pleistocene hominins, whose social use of the space was probably very different, is ultimately an opportunity to target the more elusive but crucial issue of the evolution of human inter-group relationships and complex social networks.

**Mots-Clés:** short term occupations, group size, time of occupation, early Pleistocene sites, modern foragers

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