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Finite size effects near jamming at extreme aspect ratios[1] DION KOEZE, BRIAN TIGHE, TU Delft — Many soft matter systems are confined in some but not all dimensions; examples include microfluidic channels and inclined plane flows. Hence it is important to characterize finite size effects not only as a function of volume, but also for varying aspect ratio. For soft sphere packings close to the jamming transition, finite size effects are well understood, but only in square and cubic systems. In these cases there is clear evidence for a critical volume that diverges at jamming, but it is equally clear that this picture must break down for extreme aspect ratios. We perform simulations of soft spheres near jamming in two and three dimensions for aspect ratios as large as 1024. In addition to the previously identified critical volume, we find evidence for a non-trivial length scale that diverges at the jamming point.

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