



## Mathematics and CS Seminar

# Waists of balls in different spaces

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Host: Jan Maas

Gromov and Memarian (2003--2011) have established the waist inequality asserting that for any continuous map  $f$  from the sphere  $S^n$  to  $R^{n-k}$  there exists a fiber  $f^{-1}(y)$  such that every its  $t$ -neighborhood has measure at least the measure of the  $t$ -neighborhood of an equatorial subsphere  $S^k$  of  $S^n$ . Going to the limit we may say that the  $(n-k)$ -volume of the fiber  $f^{-1}(y)$  is at least that of the standard sphere  $S^k$ . We extend this limit statement to the exact bounds for balls in spaces of constant curvature, tori, parallelepipeds, projective spaces and other metric spaces. By the volume of preimages for a non-regular map  $f$  we mean its lower Minkowski content, some new properties of which will be also presented in the talk. (based on the joint work with Roman Karasev and Alfredo Hubard)

**Thursday, February 8, 2018 04:00pm - 06:00pm**

Big Seminar room Ground floor / Office Bldg West (I21.EG.101)



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.

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<https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.