

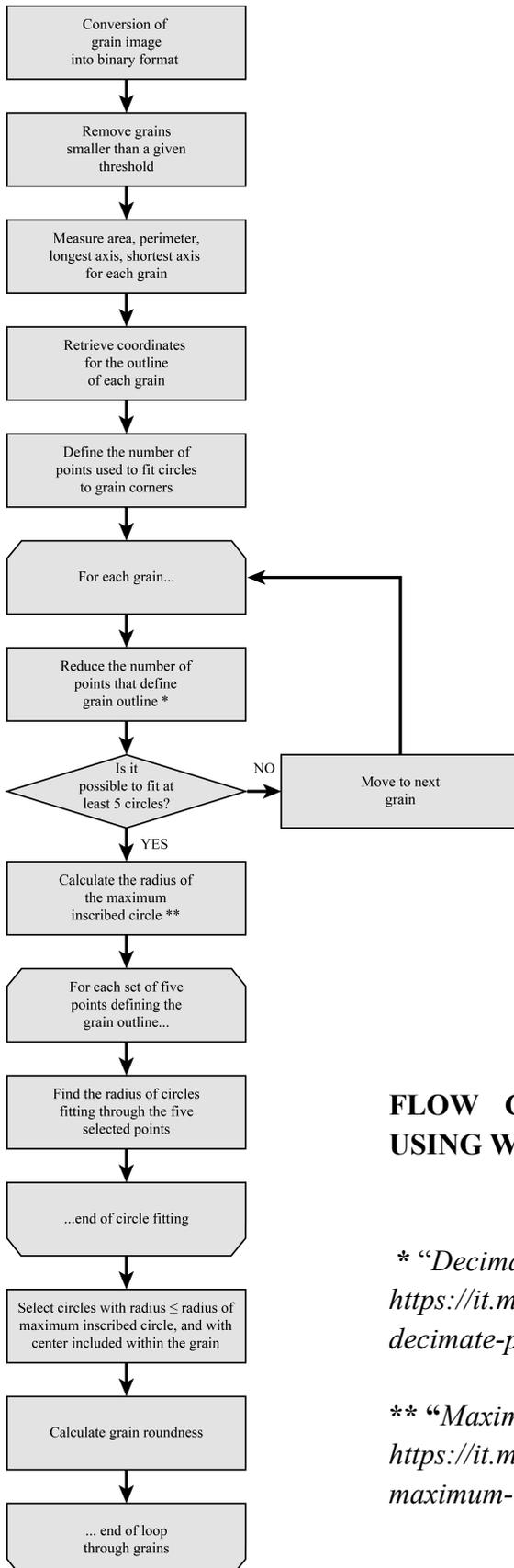
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## APPENDIX A

### *"Quantifying roundness of detrital minerals by image analysis - sediment transport, shape effects and provenance implications"*

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#### FLOW CHART FOR ROUNDNESS DETERMINATION USING WADELL METHOD.

\* *"Decimate polygon"* by Anton Semechko  
<https://it.mathworks.com/matlabcentral/fileexchange/34639-decimate-polygon> . The operation is needed to avoid pixelation.

\*\* *"Maximum Inscribed Circle"* by Tolga Birdal  
<https://it.mathworks.com/matlabcentral/fileexchange/30805-maximum-inscribed-circle-using-distance-transform>.

**Table A1. Sample location.** Location of the studied sediment samples with year of sampling (see also the Google Earth file *Roundness.kmz*). Locality names in the Moçamedes Desert are mostly after Torquato (1974).

**Table A2. Textural properties.** Mean values and standard deviation of equivalent diameters and roundness values determined with both Fourier and Wadell methods for all heavy minerals in the 22 studied samples.

**Table A3. Intrasample mineralogical variability.** Heavy-mineral distribution in the coarse tail (maximum grain diameter > 300  $\mu\text{m}$ ) and fine tail (maximum grain diameter < 300  $\mu\text{m}$ ) of seven selected river-mouth, beach, and dune samples collected in the Moçamedes Desert. GSZ = grain size. HM = heavy minerals; tHM = transparent heavy minerals; HMC and tHMC = total and transparent-heavy-mineral concentration indices (Garzanti and Andò, 2007); RF = rock fragments; n.d. = not determined. The ZTR index (sum of zircon, tourmaline, and rutile over total transparent heavy minerals) evaluates the “chemical durability” of the detrital assemblage (Hubert 1962). The HCI (Hornblende Color Index) and MMI (Metasedimentary Minerals Index) vary from 0 in detritus from greenschist-facies to lowermost-amphibolite-facies rocks yielding exclusively blue-green amphibole and chloritoid, to 100 in detritus from granulite-facies rocks yielding exclusively brown hornblende and sillimanite, and are used to estimate the average metamorphic grade of metaigneous and metasedimentary source rocks, respectively (Andò et al. 2014).

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