

Semi-automatic Ice Rafted Debris quantification with Computed Tomography

Jan Magne Cederstrøm¹, Willem G.M. van der Bilt¹, Eivind W.N. Støren¹ and Sunniva Rutledal¹

1. Department of Earth Science, University of Bergen, Allégaten 41, 5007 Bergen, Norway and Bjerknes Centre for Climate Research, Bergen, Norway affiliations

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Introduction

This document contains four figures that help **1)** visualize the presented CT-based counting workflow (Figure S1), **2)** ascertain the mineralogy (and therefore density) of the lithologies used to spike our synthetic sediment sequences (Figure S2), **3)** provide an overview of data processing steps of the presented CT-based workflow (Figure S3), and **4)** visualize the imprint of (bio)disturbance on scanned cores.

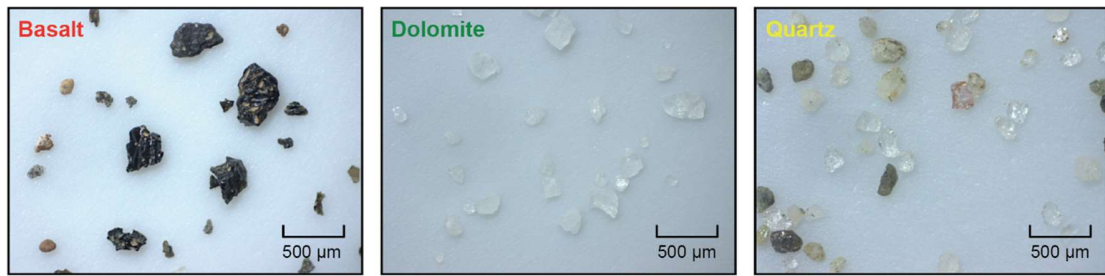


Figure S1. Light microscope close-ups ($\times 40$ magnification) of grains from each of the lithologies used to spike the synthetic sediment archives in our experimental design.

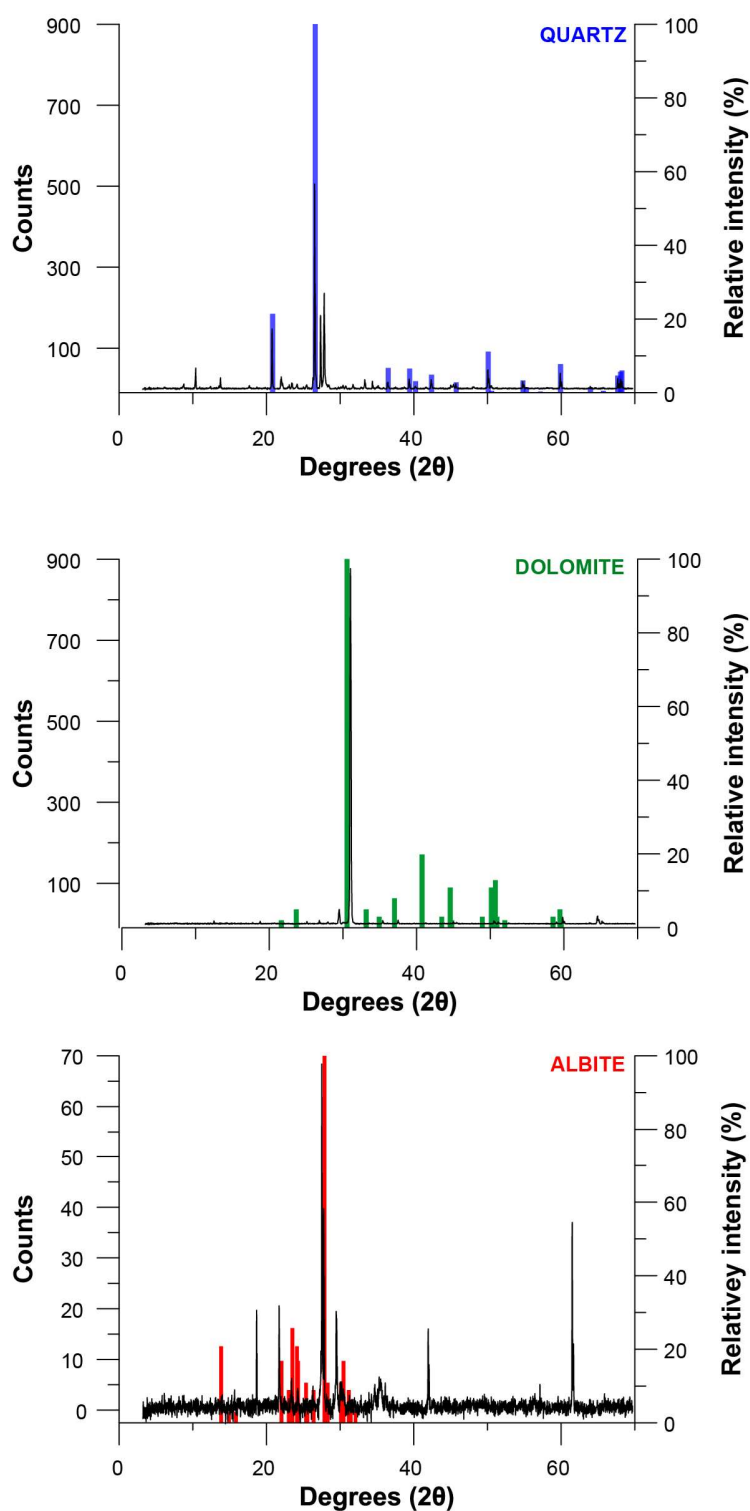


Figure S2. XRD diffractograms of each of the lithologies used to spike our synthetic sediment archives, compared to reference stick patterns of the most diagnostic minerals based on a search/match operation using the ICDD 2007 database. Colors match Fig. S1.

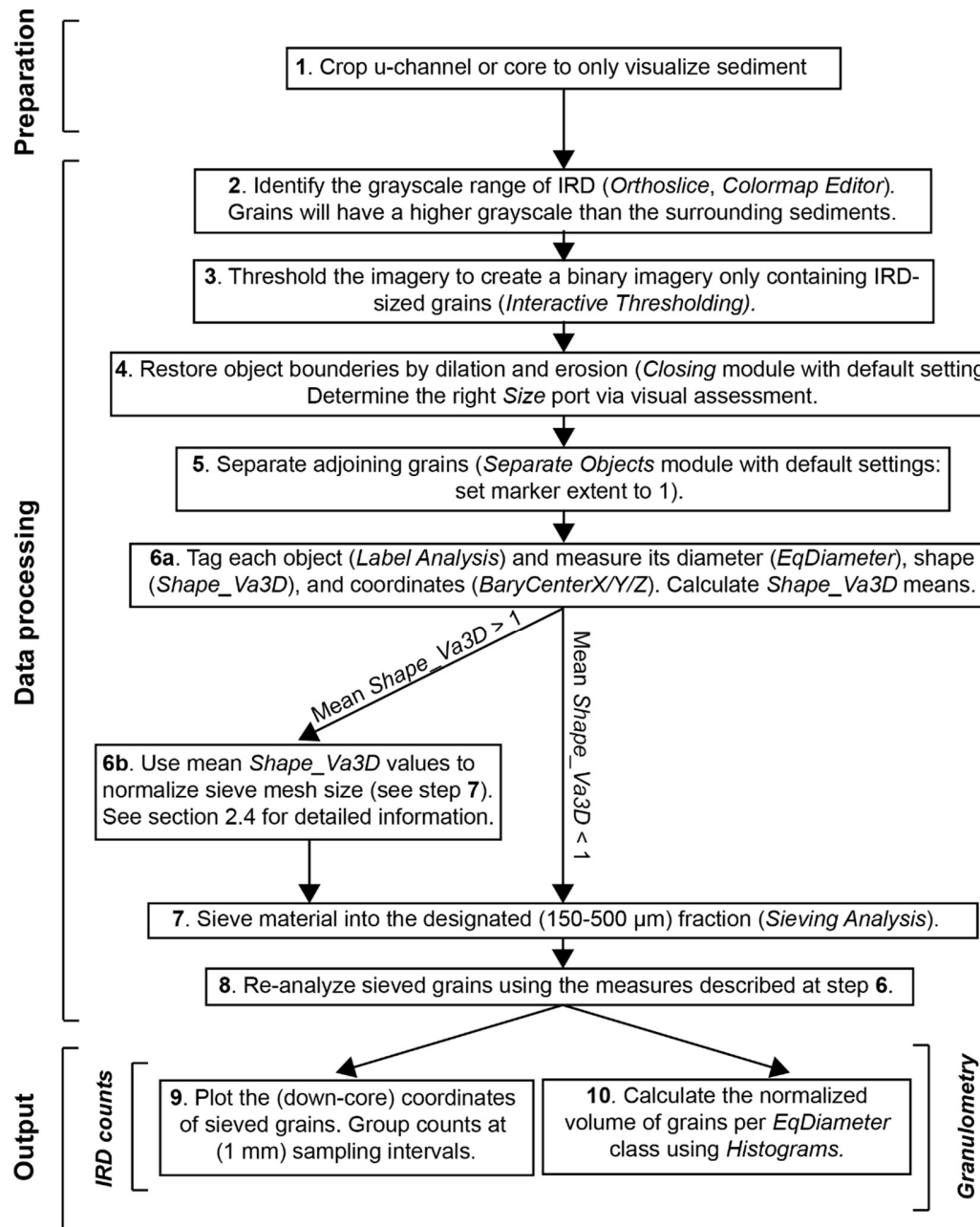


Figure S3. A flowchart of the workflow employed in this study to identify, resolve and count IRD-sized particles from CT scans. Avizo operators are highlighted in *italics*: see section 2.4 and Fig. 1 in the main manuscript for additional details.

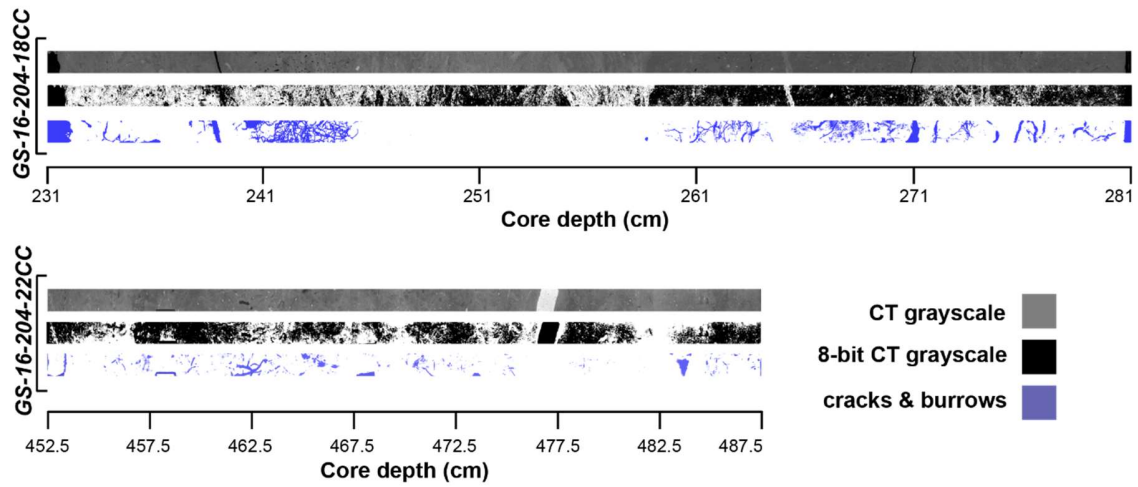


Figure S4. CT imagery of the scanned u-channels of sections from both cores used to recount manual IRD profiles using our CT-based approach. Please note that cracks and burrows were iteratively visualized using the segmentation approach also described in section 2.4. The 8-bit image was generated using *histogram equalization* in Avizo.