Supporting Information for

Investigating the Linkage Between Spiral Trough Morphology and Cloud Coverage on the Martian North Polar Layered Deposits

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Introduction

This supporting information includes combined PDF graphs seen in the full text separately for ease of comparison of the distributions for each trough metric (Figure S1), a map showing the location of the various cloud types identified in this study (Figure S2), and histograms of the trough metrics used in this study broken down by region (Figures S3-S9).
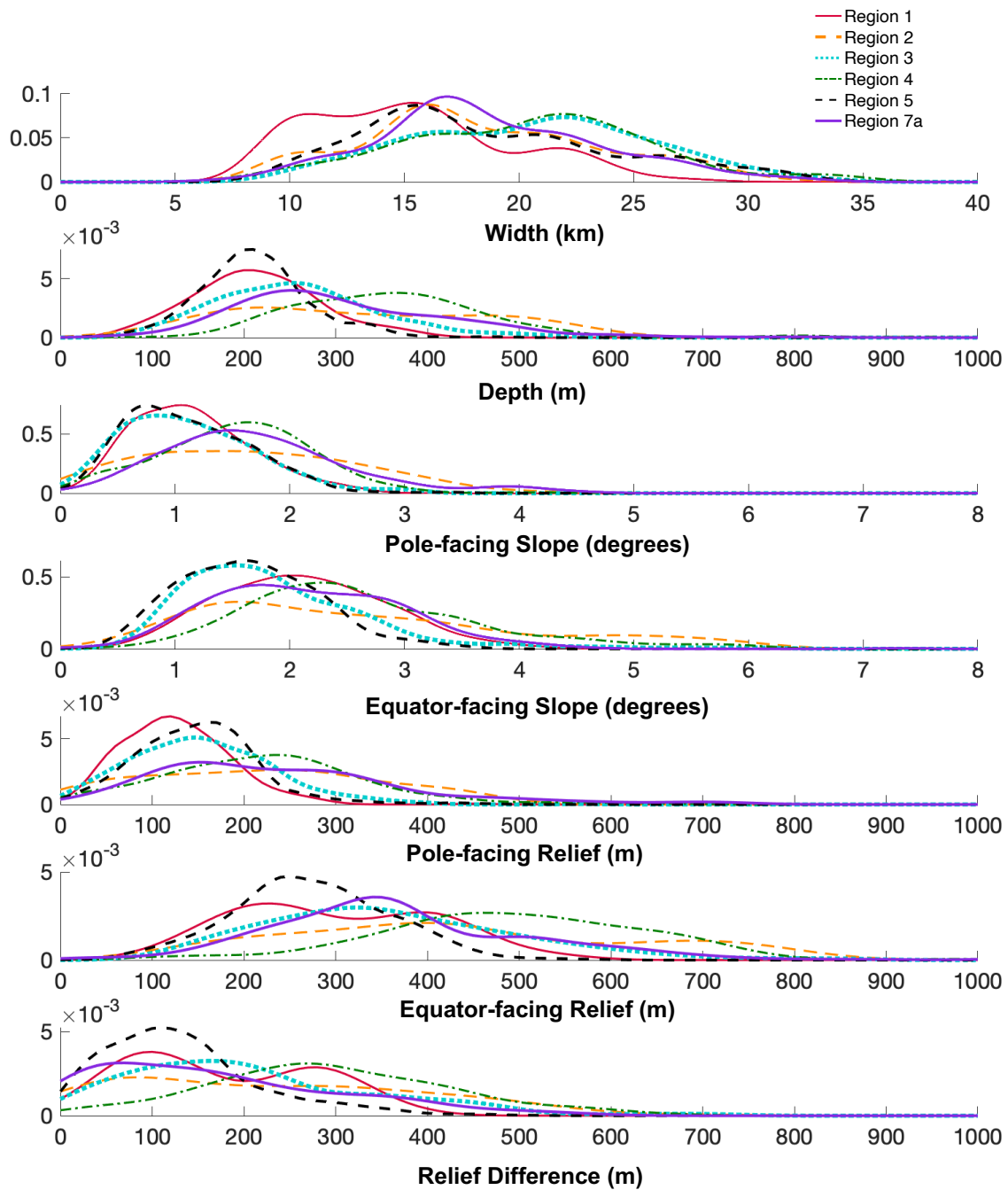
Figure S1. PDF curves of trough metric values for each region of the NPLD, broken down by metric. For histograms of raw data see Figures S3-9.
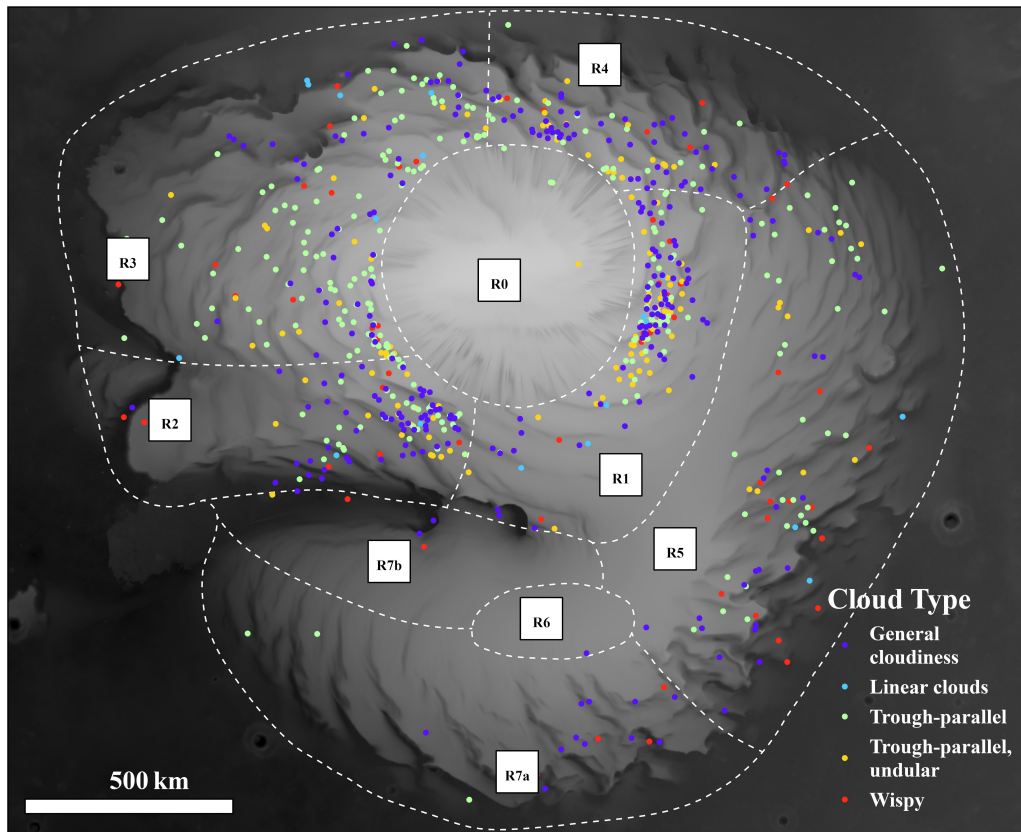
Figure S2. A map of the NPLD where THEMIS images with trough-parallel clouds (green circles), undular, trough-parallel clouds (yellow circles), linear clouds (blue circles), wispy clouds (red circles), and general cloudiness (purple circles) were identified in this study.
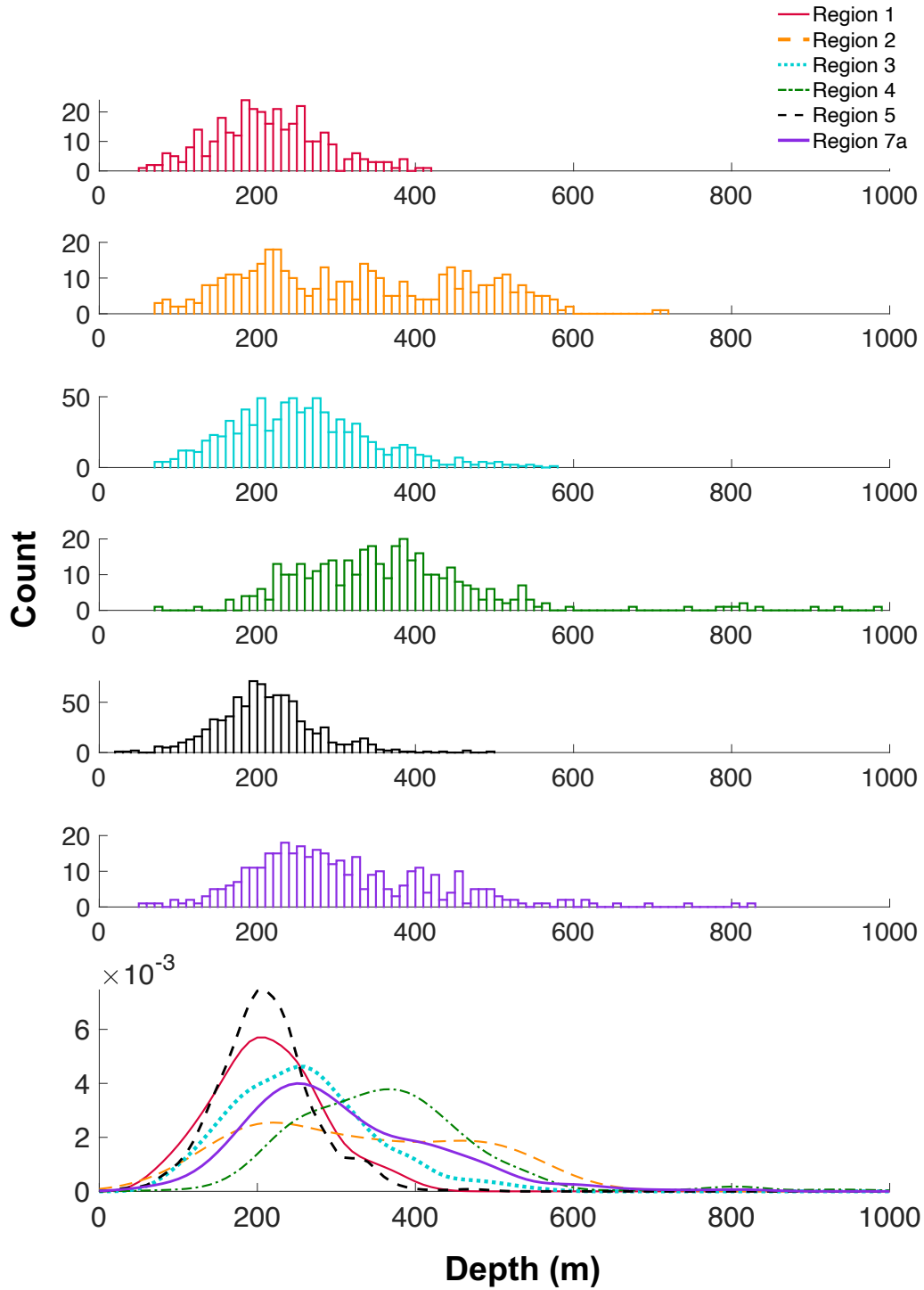
Figure S3. Histograms of trough depth data from each region, followed by probability distribution function (PDF) curves of the depth data, plotted by region. R1 is red, R2 is orange, R3 is blue, R4 is green, R5 is black, and R7a is purple. R0, R6, and R7b are not included as they have no troughs.
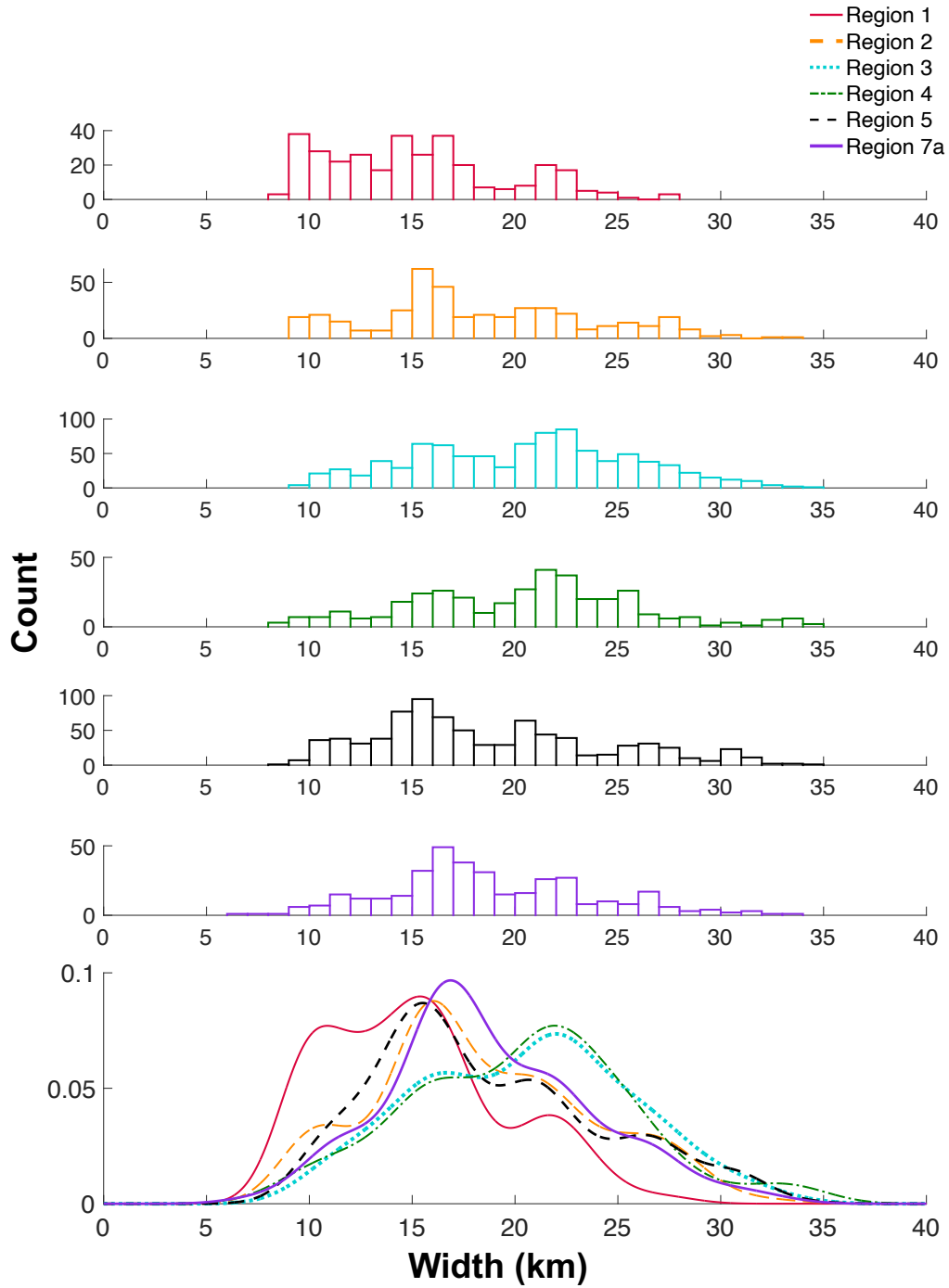
Figure S4. Histograms of trough width data from each region, followed by probability distribution function (PDF) curves of the width data, plotted by region. R1 is red, R2 is orange, R3 is blue, R4 is green, R5 is black, and R7a is purple. R0, R6, and R7b are not included as they have no troughs.
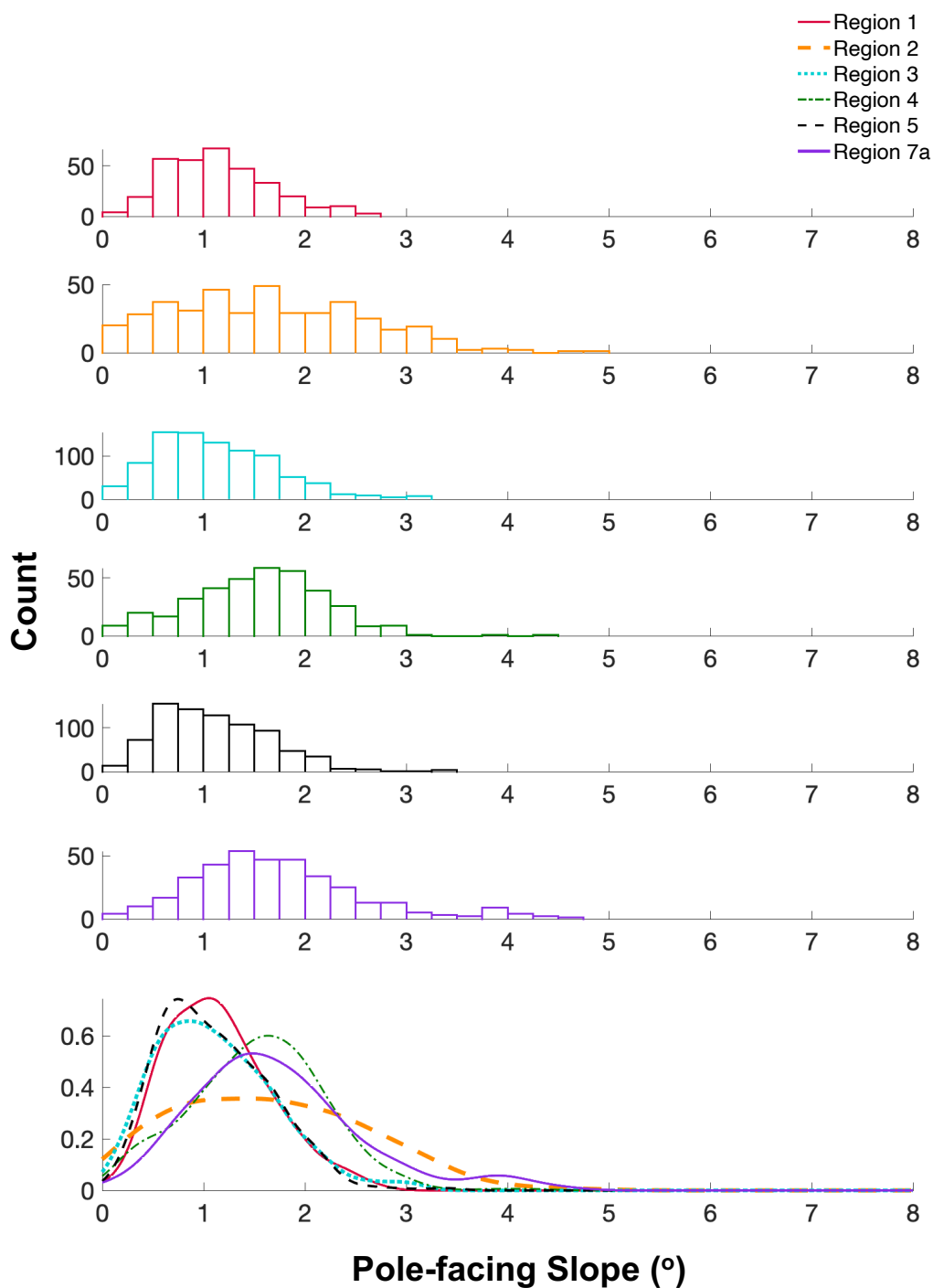
Figure S5. Histograms of trough pole-facing slope data from each region, followed by probability distribution function (PDF) curves of the pole-facing slope data, plotted by region. R1 is red, R2 is orange, R3 is blue, R4 is green, R5 is black, and R7a is purple. R0, R6, and R7b are not included as they have no troughs.
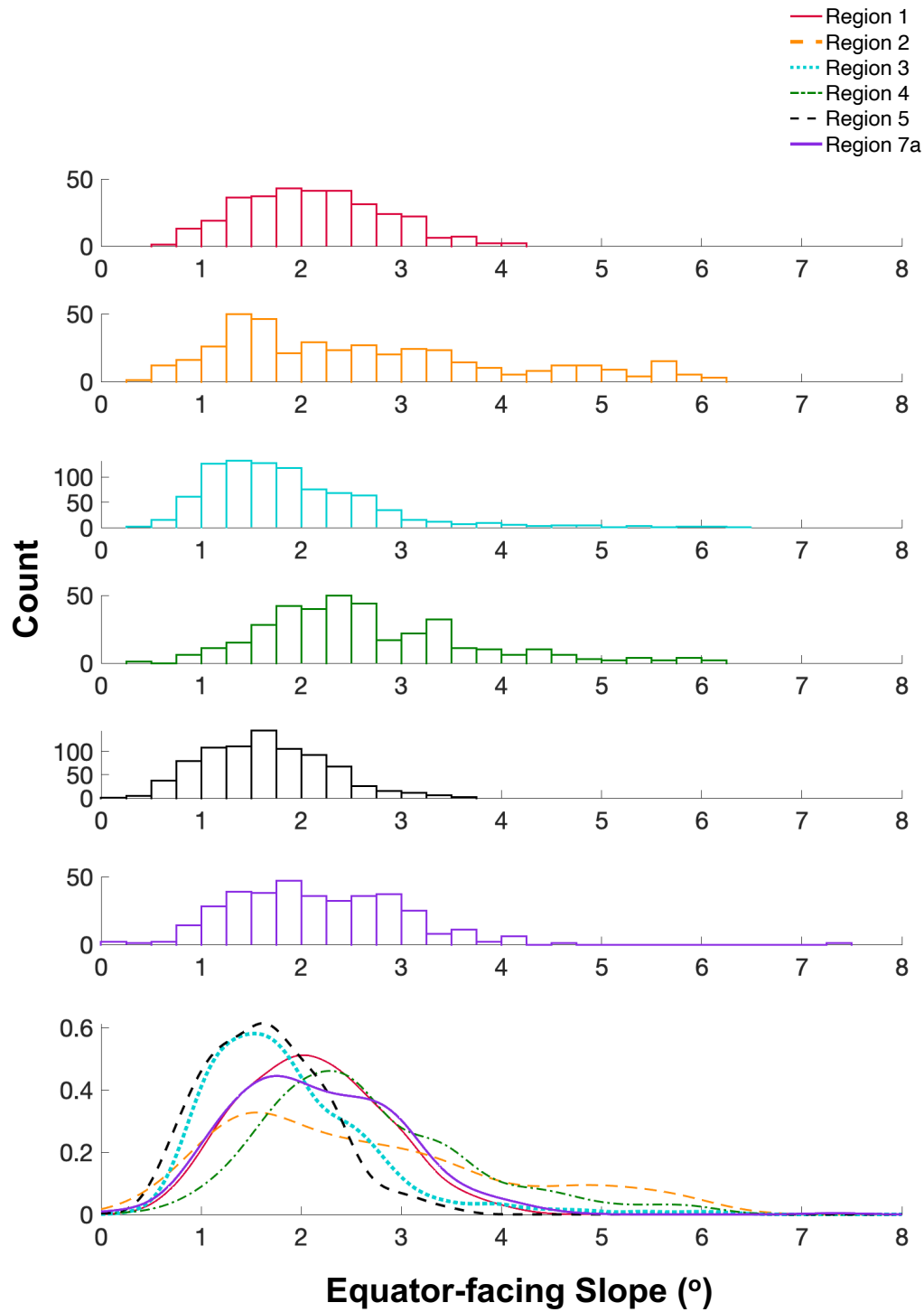
Figure S6. Histograms of trough equator-facing slope data from each region, followed by probability distribution function (PDF) curves of the equator-facing slope data, plotted by region. R1 is red, R2 is orange, R3 is blue, R4 is green, R5 is black, and R7a is purple. R0, R6, and R7b are not included as they have no troughs.
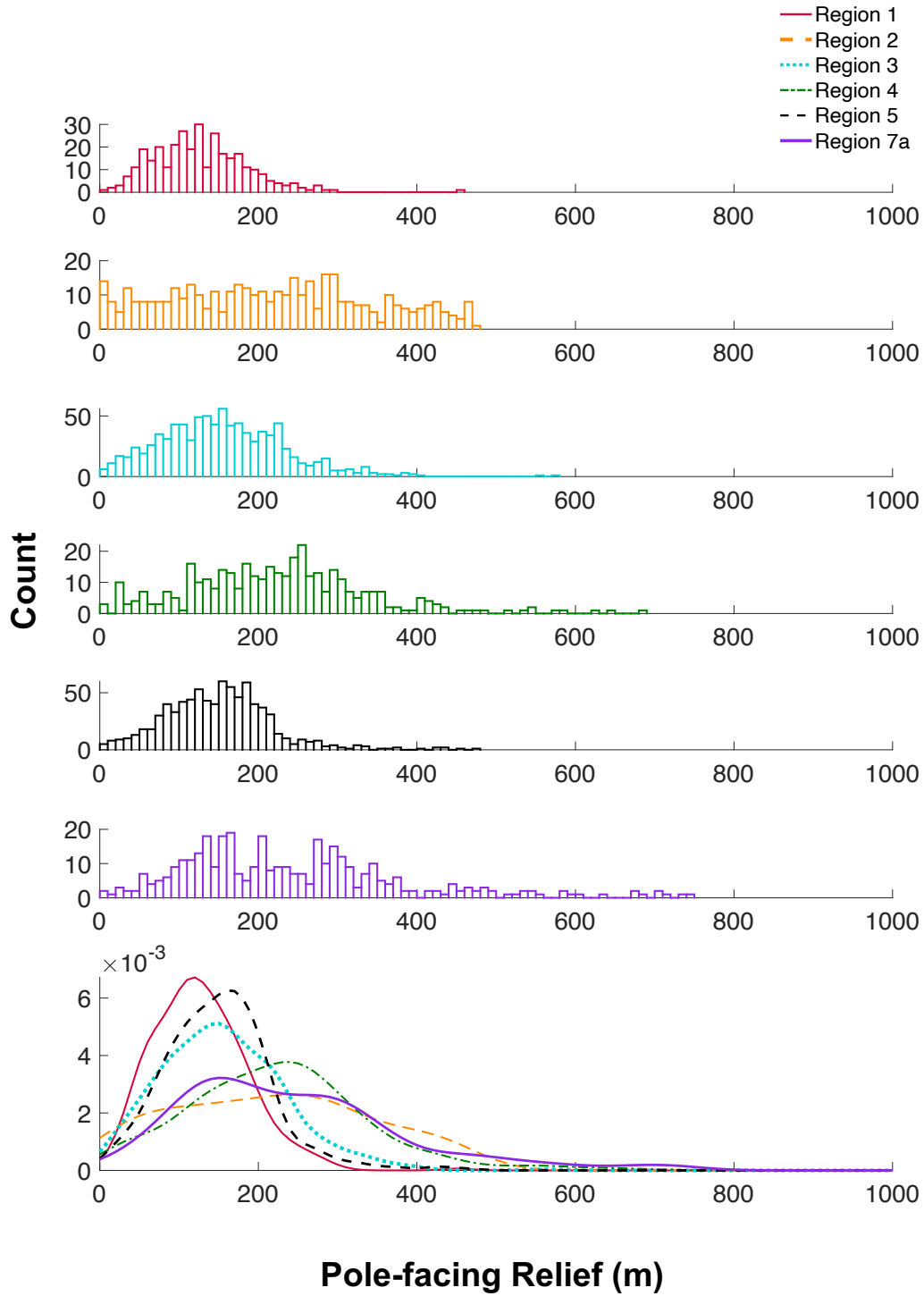
Figure S7. Histograms of trough pole-facing relief data from each region, followed by probability distribution function (PDF) curves of the pole-facing relief data, plotted by region. R1 is red, R2 is orange, R3 is blue, R4 is green, R5 is black, and R7a is purple. R0, R6, and R7b are not included as they have no troughs.
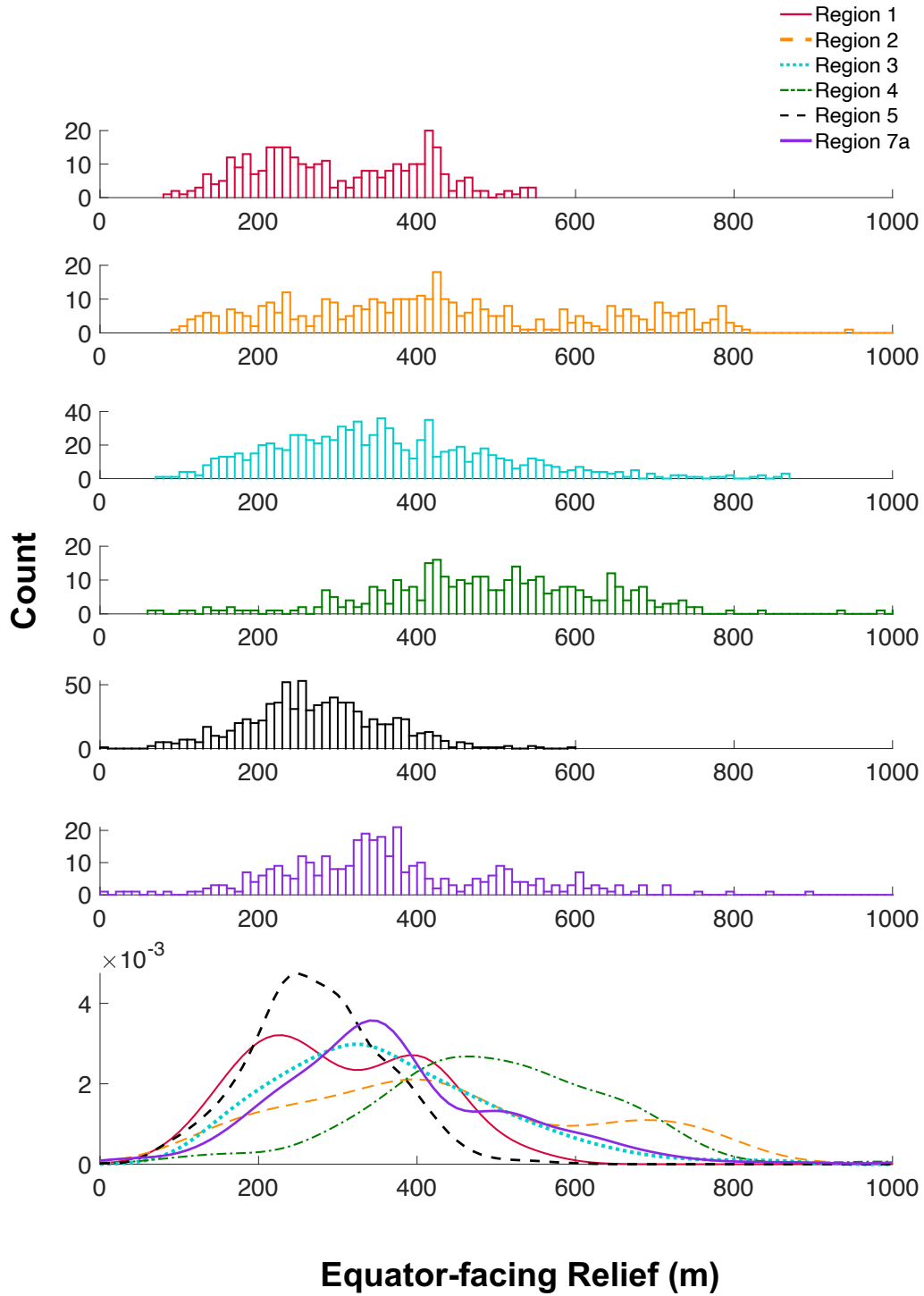
Figure S8. Histograms of trough equator-facing relief data from each region, followed by probability distribution function (PDF) curves of the equator-facing relief data, plotted by region. R1 is red, R2 is orange, R3 is blue, R4 is green, R5 is black, and R7a is purple. R0, R6, and R7b are not included as they have no troughs.

Figure S9. Histograms of trough wall relief difference data from each region, followed by probability distribution function (PDF) curves of the relief difference data, plotted by region. R1 is red, R2 is orange, R3 is blue, R4 is green, R5 is black, and R7a is purple. R0, R6, and 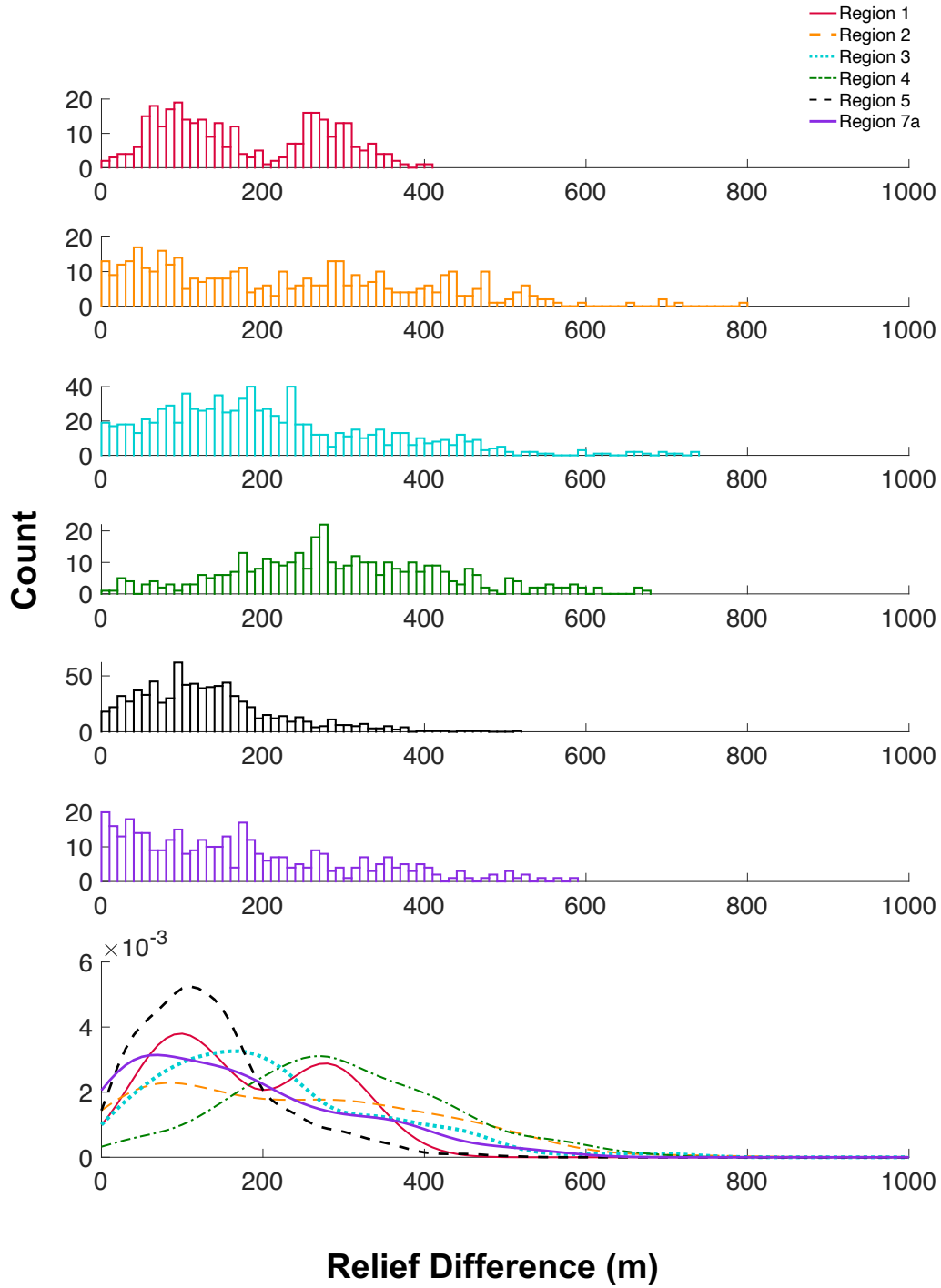R7b are not included as they have no troughs.