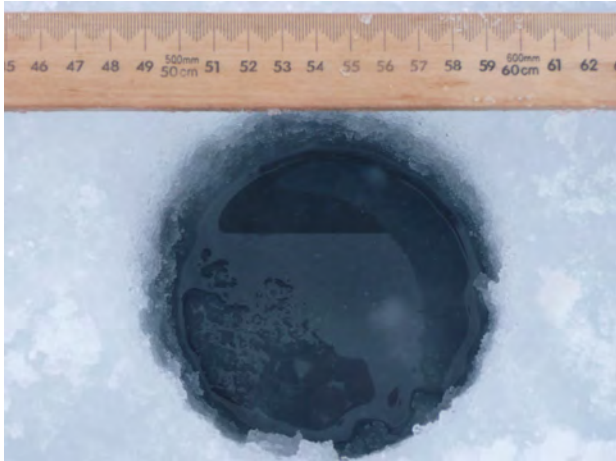
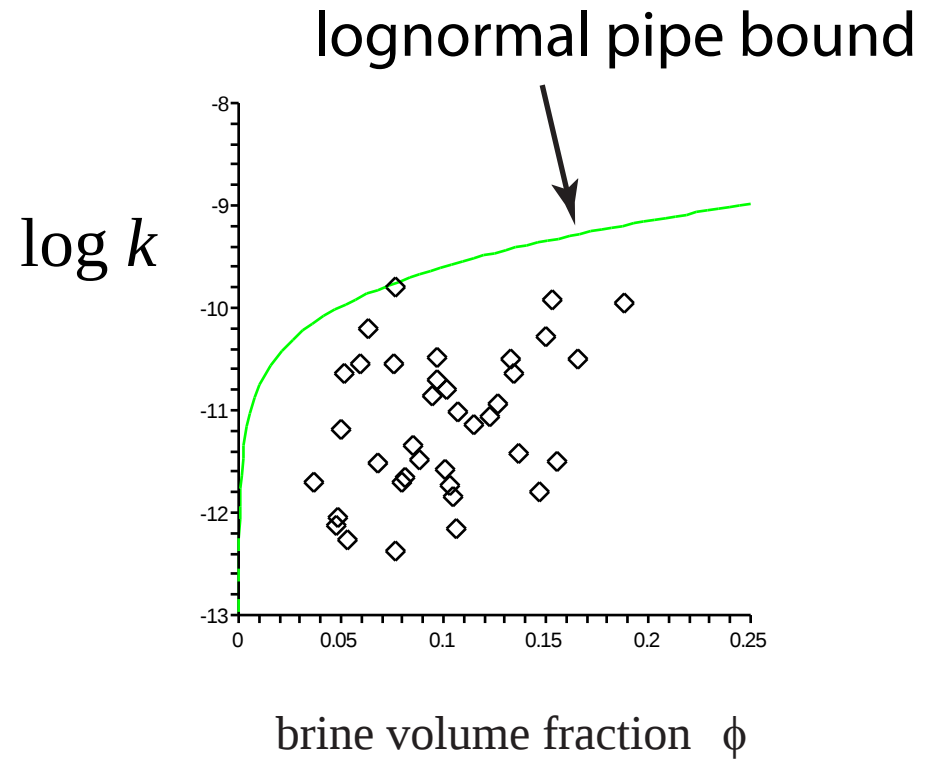
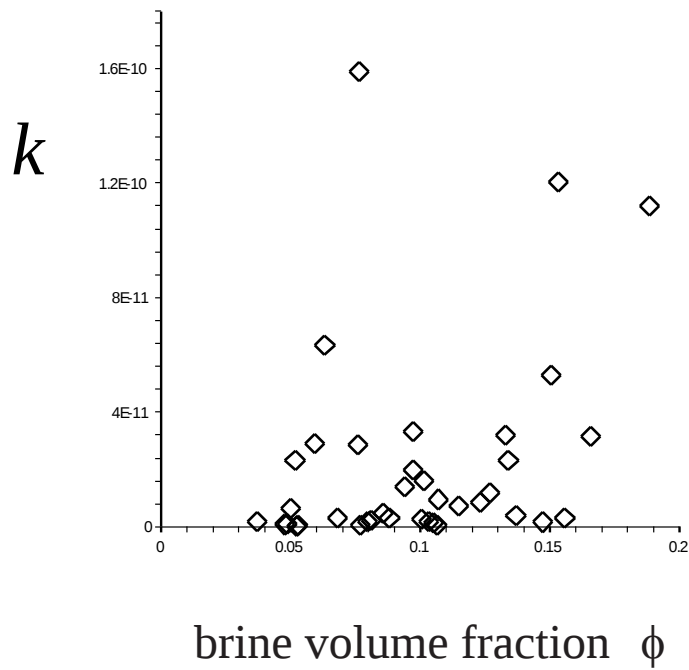


Measurements of fluid permeability



(Photo by Jan Lieser)

corrected permeability data -- excludes horizontal flow

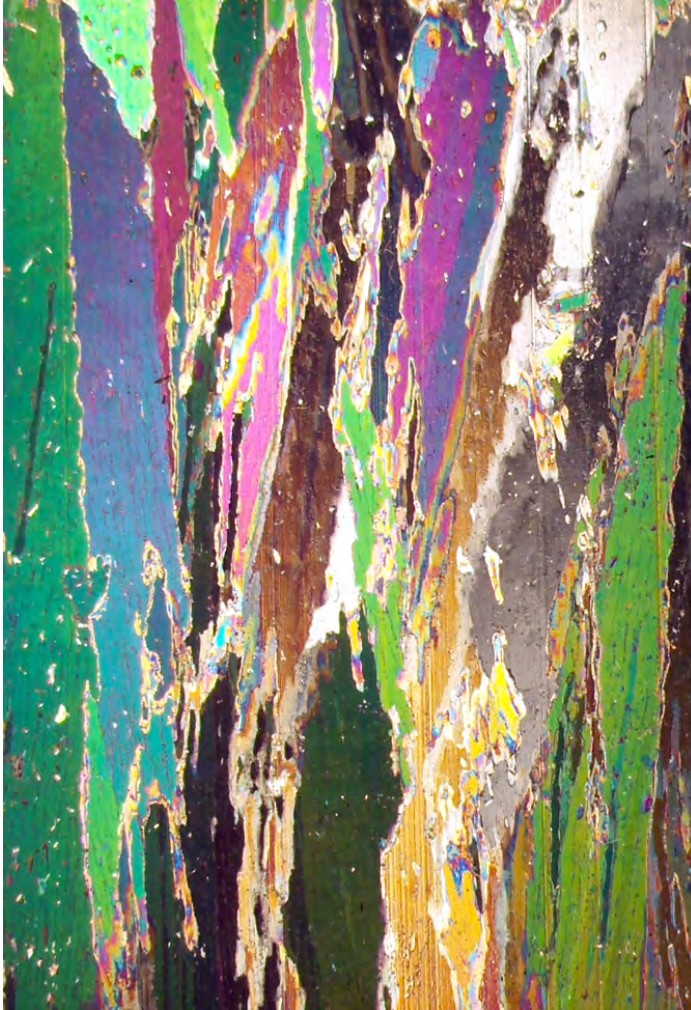


higher threshold for fluid flow in Antarctic granular sea ice

columnar

granular

5%



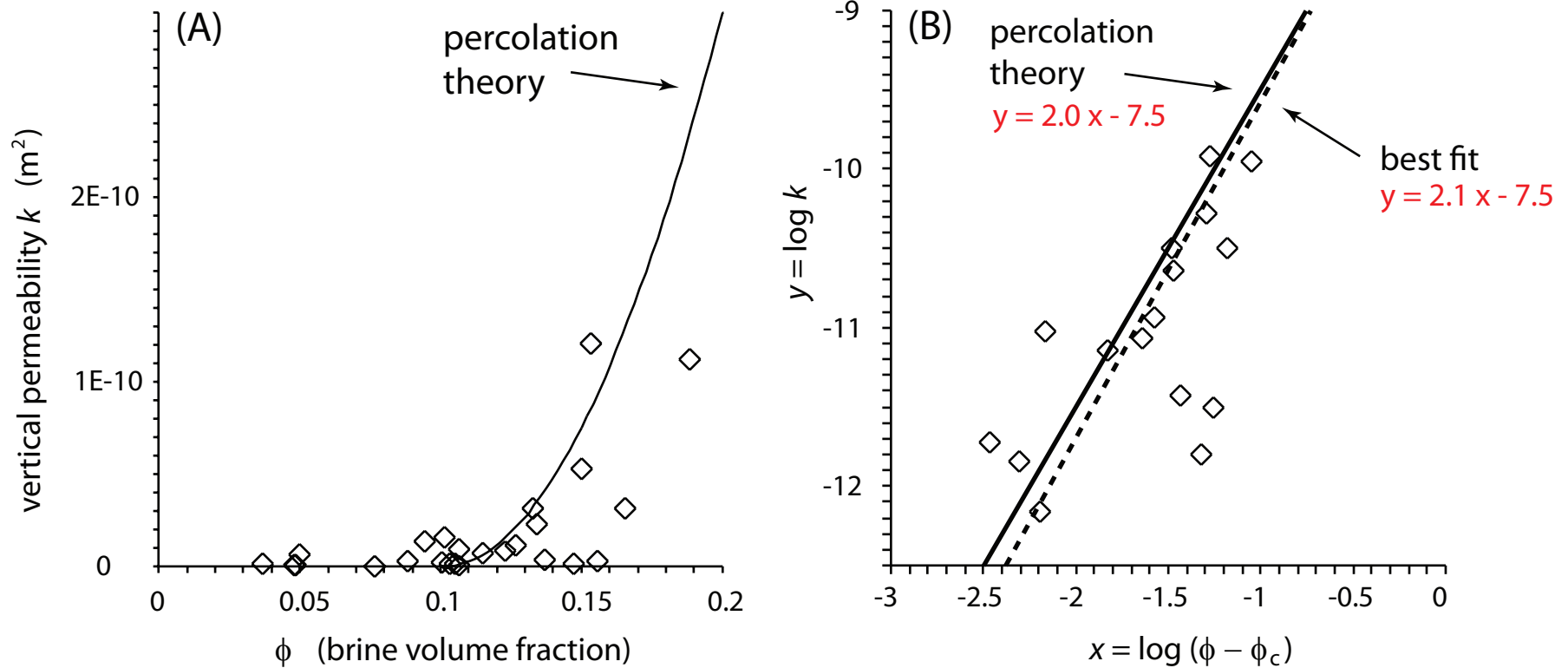
10%



different microstructure -- different threshold

granular ice common in Arctic surface layer

permeability data for granular sea ice



$$\frac{1}{1 + \frac{\xi \phi}{4 X_c}}$$

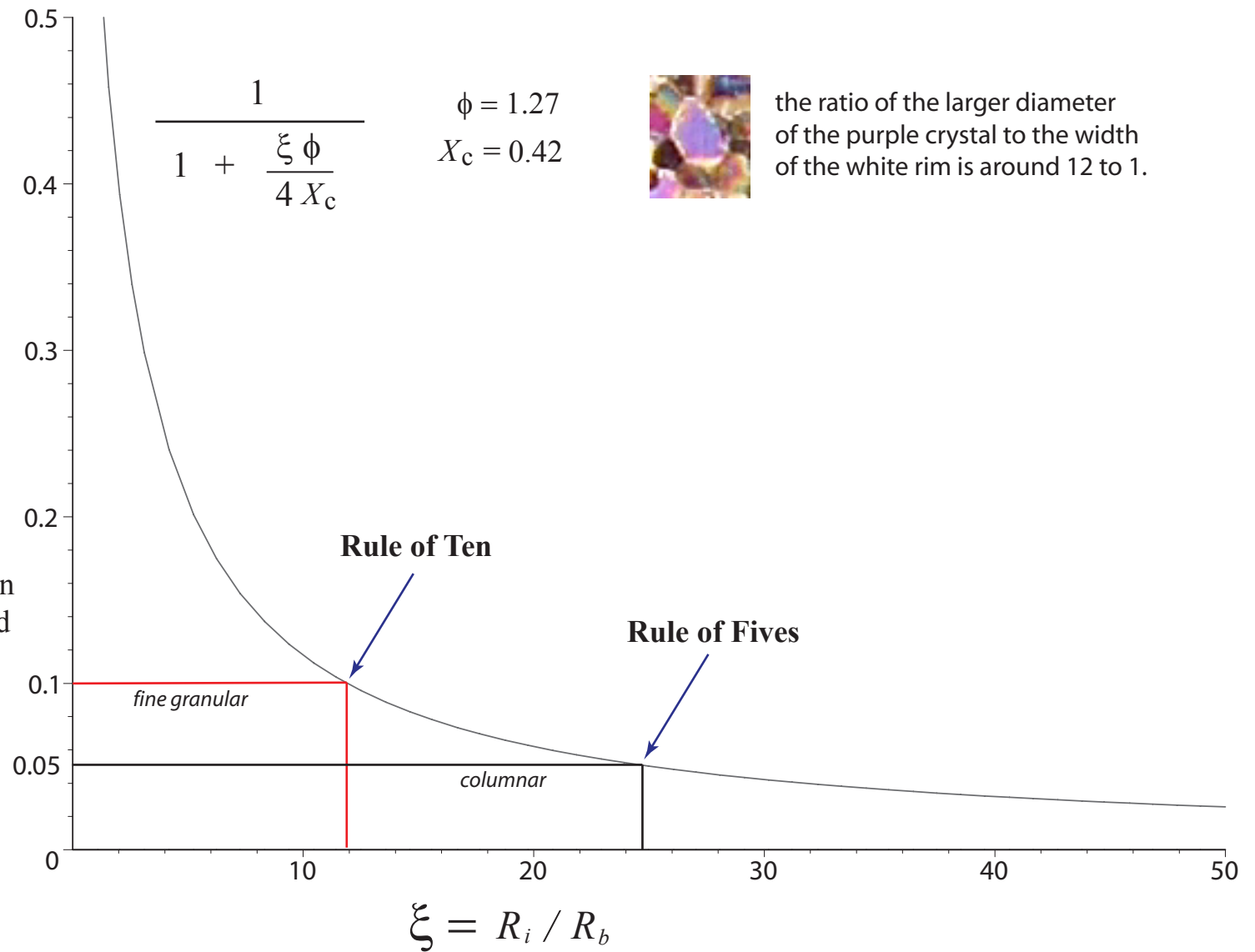
$$\phi = 1.27$$

$$X_c = 0.42$$



the ratio of the larger diameter
of the purple crystal to the width
of the white rim is around 12 to 1.

percolation threshold
critical brine volume fraction
(calculated from compressed
powder model)



crystal data for compressed powder model

