



Percolation - Hardness or Gravity



When it comes to percolation, is gravity or hardness a stronger factor?

We went up into the mountains and dyed some snow to observe the different aspects of how the snow melts.


We hypothesised that the hardness of the snow would be the strongest factor in percolation.





Relation to Reality

Testing this is somewhat representative of how snow melts through different conditions, and how the weather that snow faces may change the melt rate.





Method

We went up a mountain and made sample spaces of snow.

We sprayed red liquid onto the snow and watched it melt through.

We went back 18 hours later and measured the results.

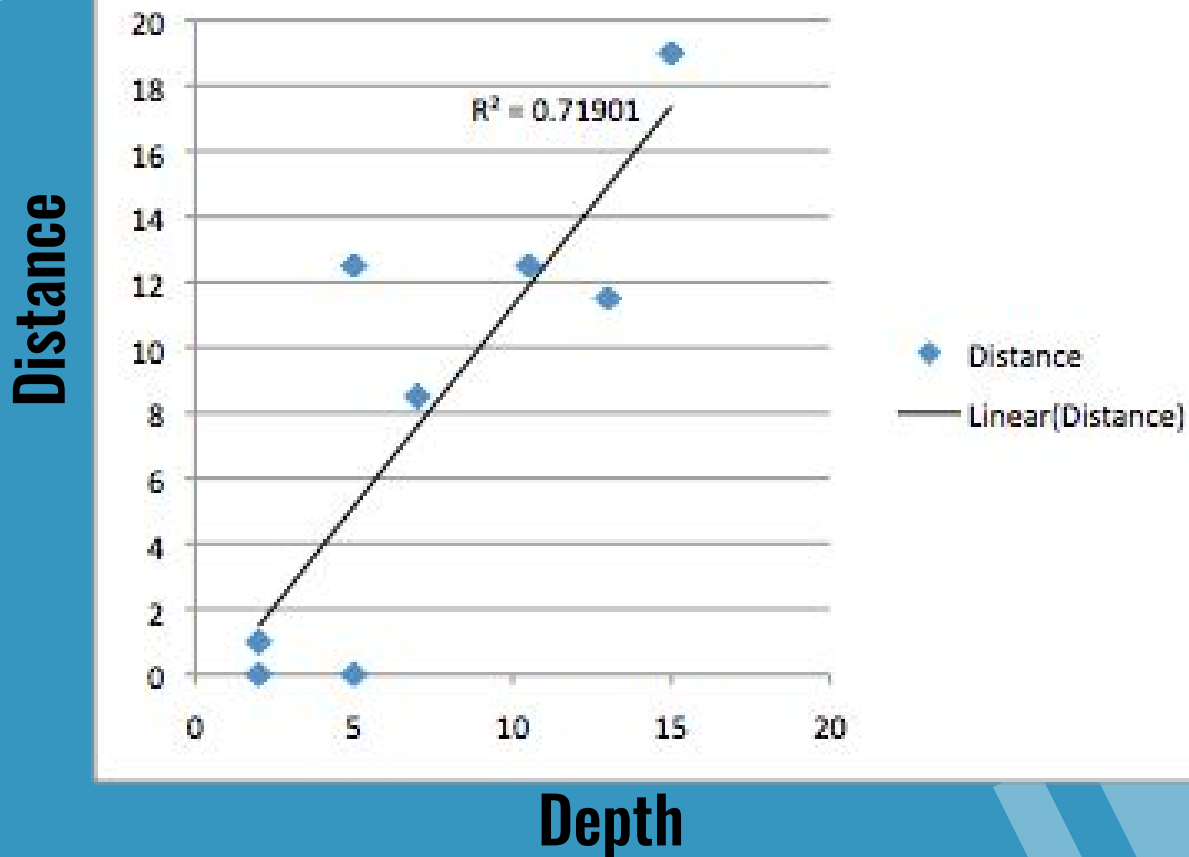
To test the hardness we stuck various foreign objects deep inside.



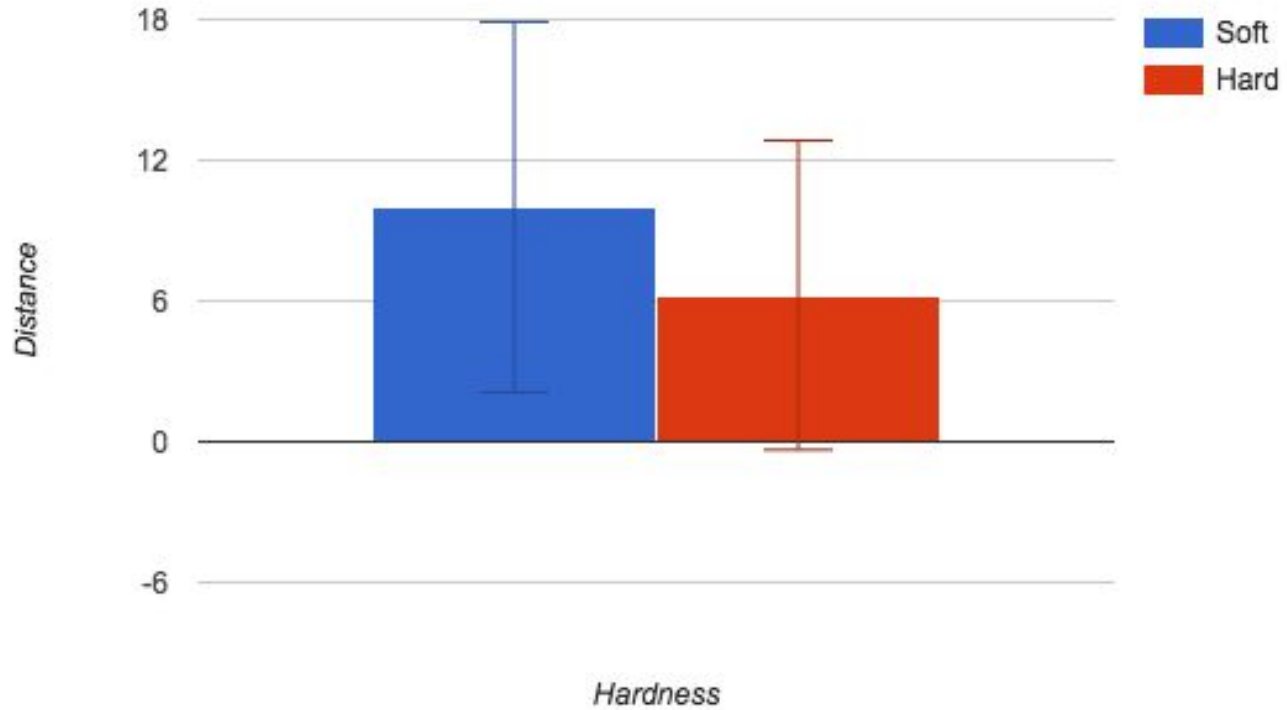
GRAPHS

A wide-angle photograph of a snowy mountain landscape. In the foreground, a snow-covered slope leads down to a dense forest of evergreen trees. In the background, more snow-covered mountains are visible under a bright blue sky with scattered white clouds. The word "GRAPHS" is written in large, bold, white, sans-serif capital letters across the center of the image, partially overlapping the trees and the sky.

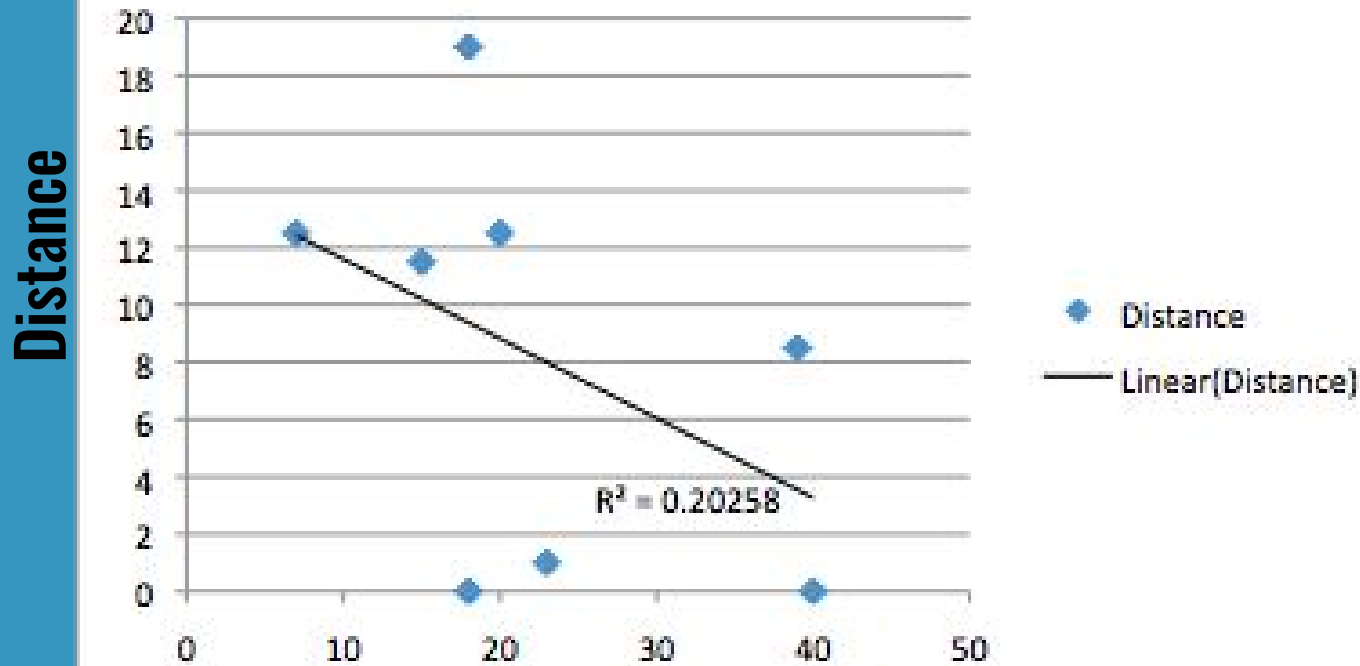
Depth vs Distance



Distance dye traveled

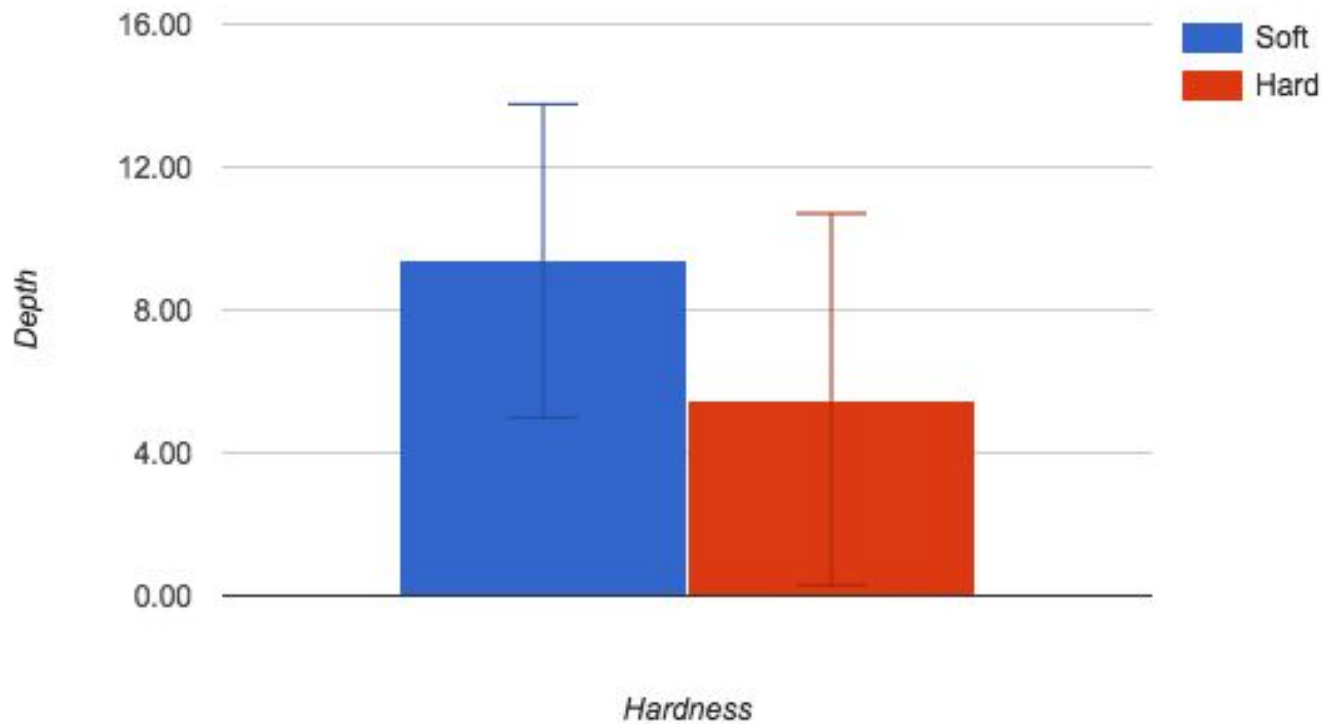


Distance vs Slope

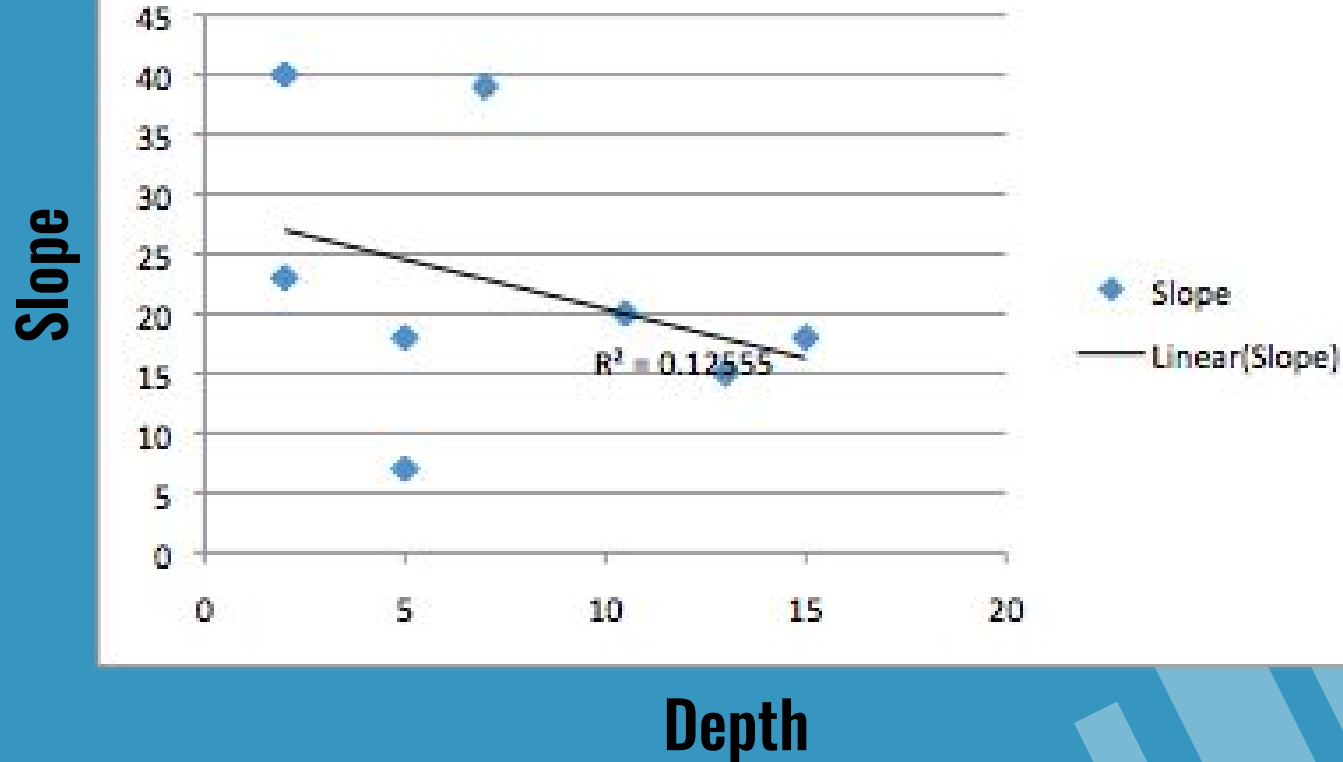


Slope

Depth dye sunk in



Slope vs Depth





Results

We found that the factors with the most correlation were depth and distance.


Different conditions are quite important when it comes to the snow's melt.

No conclusive results were found to disprove or prove our original hypothesis.






Improvements

- » Many more samples
 - » More accurate timing for collecting samples
 - » More relevant information
 - » More accurate measurements
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Additional Questions

- » Does the altitude affect hardness of snow?
 - » What ways can we get more accurate measurements?
 - » How can we eliminate the experimental errors made?
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