

## Water dewetting on ice

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When considering a drop of melt on its own solid, intuition would lead to the conclusion that this drop will wet the solid completely. However, in the case of water on ice, experiments by Knight in 1966 showed that macroscopic water droplets can be observed on ice, suggesting a dewetting behaviour. We will see from recent experiments carried out in different configurations that the question of the contact angle of water on ice is still an open question. Experiments on the dewetting of a thin film of water on ice, with the formation of a droplet, will lead to the measurement of an angle between ice, liquid and air [2]. In a Landau–Levich coating experiment, we studied the removal of an ice plate from a water bath. Using a theoretical approach combining solidification and capillary fluid mechanics, we are able to identify a regime where a stable contact line of water on ice is maintained in a permanent regime. In this regime, the vertical position of the contact line depends on the angle between the three phases. This measurement finally allows us to propose a value for the contact angle of water on ice.



Figure 1. Historical experiment of a film of water dewetting on ice. [1]

## References

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