# Testing the Pointing of IceCube Using the Moon Shadow in Cosmic-Ray-Induced Muons

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## What is this contribution about?

The shadow in cosmic-ray-induced muons caused by the moon's absorption of cosmic rays is measured with IceCube using more sophisticated methods than in previous analyses.

## Why is it relevant / interesting?

The moon shadow can be used to test new analysis methods or a new detector calibration, compare algorithms for the directional reconstruction of muons, or be used to investigate the geomagnetic field.

## What has been done?

New methods for the moon analysis were developed and applied to three muon reconstruction algorithms to test their relative performance.

## What is the result?

The new methods are shown to improve the significance of the moon shadow. A machine-learning-based muon reconstruction algorithm shows only a slightly worse performance than the prevailing likelihood-based algorithm. A high-energy improvement of the prevailing algorithm shows similar performance due to the limited energy range of the moon data.