

# Vast hollow chamber within iconic Swiss mountain worries geologists

1 April 2014



Credit: Creative Commons

The Matterhorn's days are numbered. Although populations are not in danger, scientists warn that its predicted collapse could occur at any moment.

Geologists have found evidence of a vast hollow chamber at the heart of the Matterhorn. Using triple-woven spectroscopic probes, they discovered and then re-created in three dimensions the enormous hollow chamber in the deep interior of the mountain. They measured the superficial rocky external layer, which has an average depth of 15 meters, and mapped with precision several superficial fracture lines. The mountain is dangerously unstable, they say. But they add that surrounding populations have nothing to worry about, because due to its world-famous pyramidal shape, the Matterhorn will simply collapse in upon itself without generating dangerous rockslides along its flanks. The discovery was recently published in the journal *Nature Apocalypses*.

"The issue is not if it will collapse, but when. It could happen in a thousand years, or it could happen next week," warns study author Jean-Manu Torthézy. "The population has, in principle, nothing to worry about. But they could get a rude shock some morning when they wake up!"

Because instead of the glorious and iconic symbol of the Swiss Alps on the horizon, the inhabitants of Zermatt would wake up to a smooth mountain pasture above the village. "According to our computer models of the Matterhorn, it should fall from its current height of 4,478 meters to a rounded dome of only 2,120 meters."

All mountains eventually disappear, the geologist reminds us. But normally this occurs over millions of years as part of a slow process of erosion. "In the very unusual case of the Matterhorn, it will be a little quicker and certainly a lot louder!"

Local herders were the first to raise the alarm that something was amiss. The crevices that open into the mountain's inner chamber are deadly traps for the animals grazing the alpine pastures.

"Goatherds are familiar with them and have been passing down their location for generations, but lately new fissures have appeared and others that were barely wide enough for a ballpoint pen are now large enough to swallow a cow," says Torthézy.

The Federal Office of Hiking Tourism (FOTP) has already begun preparing for post-Matterhorn reality. In discussion with the country's primary postcard producers, they are trying to find the best viewpoint for promoting the international image of the Valais ski resort, says FOTP director Stefan Müller. Hopefully this will help compensate for the inevitable hit that the tourist business will suffer.

Provided by Ecole Polytechnique Federale de Lausanne

APA citation: Vast hollow chamber within iconic Swiss mountain worries geologists (2014, April 1)  
retrieved 19 June 2019 from <https://phys.org/news/2014-04-vast-hollow-chamber-iconic-swiss.html>

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