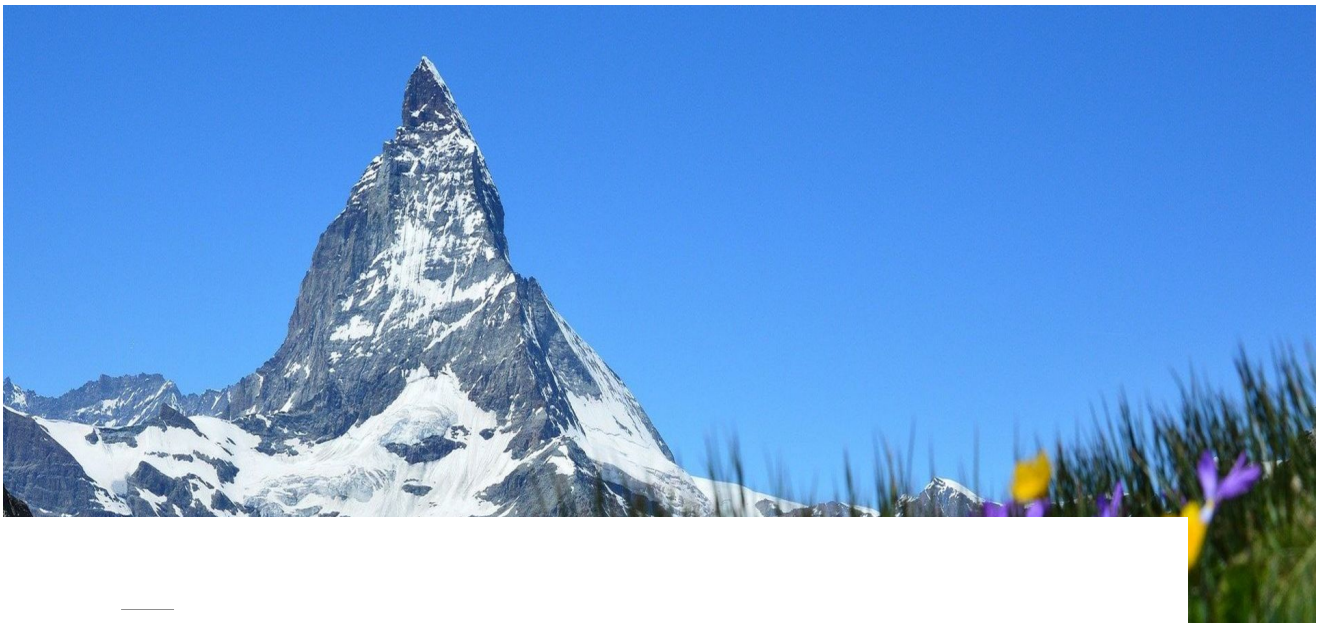


April Fools'! The Matterhorn will retain its distinctive peak. But could a laser really cut through mountains?

Should the summit of the Matterhorn really be removed with a superlaser from TRUMPF in order to build a hotel there? Not at all! That was, of course, an April Fool's joke. But would it be possible? Andreas Conzelmann, CEO of TRUMPF Switzerland AG, explains.

Mr. Conzelmann, you are not only CEO of TRUMPF Schweiz AG, but also a passionate mountaineer. You've been up the Matterhorn yourself: What would you think of straightening the summit, as we portrayed it in our April Fools' article?

Conzelmann: The heart of a laser manufacturer beats in my chest. But we must protect and preserve the wonderful mountain world for our children and our children's children. That is why I would be decidedly against such a massive intervention in the geology and completely against the construction of a hotel on such a wonderful peak as the Matterhorn. That would take away the magic of the "Horu" - as the people of Zermatt affectionately call "their horn".

Lasers are already being used today for engraving rock. How far away is current technology from cutting rock?

Conzelmann: Today, laser marking on steel, plastic or even rock is usually carried out with short-pulse lasers in the nanosecond range or with ultrashort-pulse lasers in the pico- or femtosecond range. Laser cutting of rock is possible in principle, but would be very slow. Therefore, laser cutting is not economical at this point.

What is the challenge of laser cutting rock?

Conzelmann: While cutting speeds of over 50 m/min can be achieved when cutting sheet metal - depending on the cutting technology, material and thickness - only small volumes can be removed from mineral materials because the heat absorption is much lower than with metals. The laser advances much more slowly than with sheet metal, for example.



Andreas Conzelmann, himself a passionate mountaineer, is glad that the Matterhorn will retain its peak.

And in the future?

Conzelmann: If laser cutting of mineral materials were economically feasible, many applications in the construction industry would be conceivable - both in building construction and civil engineering. The laser would have the advantage that any shape could be cut out by means of path control - it could therefore cut rock precisely for a tight fit in any kind of construction.

To what extent would this be interesting for TRUMPF as a market?

Conzelmann: Today, we are the world market leader in machine tools for flexible sheet metal processing and in industrial laser technology. Our technologies are used in a wide variety of areas - from agricultural machinery manufacturing to aerospace. We have always benefited from technology transfer. We already supply the construction industry with power tools, at least - so why not also with other TRUMPF solutions at some point?