

# Database of geomorphometric parameters of scoria cones: Earth vs. Mars

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Volcanic scoria cones are one of the most examined volcanic edifices - owing to their monogenetic nature, their shape is relatively easily to model with descriptive parameters. In my research, I create a learning database that can be used to estimate the approximate age of unknown volcanoes based on their morphometric appearance. I have examined the cones of four well-studied and well-known volcanic areas, where each cone has a real (scientifically supported) age value. The most frequently used classical parameters are e.g., the height and diameter of the cones. To define these, one of the most important steps is to determine the contours of the scoria cones. If this is not defined well, it greatly affects the height-to-width ratio - not to mention the average slope angle determined by mathematical formulae.

Of course, beside terrestrial scoria cones, edifices on other planets can be studied using these methods; for instance, Martian cones are often studied. Obviously, the two planets differ in many respects: the lack of rain, vegetation, or human influence, less erosion or different gravity values all suggest that the physical appearance of the Martian forms is different from the terrestrial ones. Previous studies have shown that: in all cases, significantly wider (larger diameter) cones were identified. Since only a few digital terrain models are available for Mars, I expected to get result that were similar (or at least close to) those of other researchers using the same basic database. What happens, if not? Who should I believe: myself or previous publications?