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# Polygonal impact craters on Venus: Association with surrounding tectonic features

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It has been proved that the polygonal impact craters (PICs) are found on the Moon, Mercury, Mars and several asteroids and icy moons. Latest studies have shown that they exist also on Venus, even though the polygonal shape is not as well developed as it is on the Moon or Mars. On Mars, the polygonal impact craters – and especially their straight rim segment orientations – are not randomly distributed, but follow the large-scale tectonic trends formed by e.g. Hellas and Isidis basins. To study if this is the case also on Venus is more problematic because, unlike on Mars, there is not a large population of impact craters on Venus. Thus, we don't have statistically reliable population of PICs on Venus to analyze their correlation with the local tectonism. The preliminary studies, however, showed that there are regions where the orientations of straight rim segments seem to align with tectonic features close to the craters. To find out if there are some real correlations between the local tectonics and the straight walls of the Venusian impact craters, we measured and analyzed the orientations of the straight crater walls as well as all the surrounding tectonic features. The preliminary results show that clear correlations can be found and they seem to depend on the distance between the tectonic features and the craters as well as the type of tectonism. This indicates that the orientations of the straight rim of the craters reflect – in many cases – the local tectonics and zones of weaknesses as they do also on Mars and, therefore, they might be good tools to determine the tectonism beneath the young surface. However, this is still ongoing study and to find out the reason for these correlations

and uncorrelations, every polygonal crater and their surroundings have to be analyzed in detail.