Archimedean transformations of maps

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It is well known that the classical Archimedean solids can be obtained from the Platonic solids applying a set of locally defined transformations. In our talk we investigate these transformations in detail with the aim to generalize them so that they can be applied to regular maps of any genus. The transformations have their counterpart in the theory of Riemann surfaces and in algebraic curves defined over the field of complex numbers.