Regular maps on a given surface: A survey

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Regular maps are generalizations of the maps of Platonic solids to surfaces other than the sphere. Formally, a regular map is a cellular embedding of a connected graph on a surface such that the automorphism group of the embedding acts regularly on flags (which, apart from trivial cases, may be identified with mutually incident vertex-edge-face triples). We will survey the state-of-the art of the problem of classification of regular maps on a given surface and present open questions in this area of research.