eRocK: an online, open-access repository of virtual outcrops and geological samples in 3D

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The strong potential of virtual outcrops to provide detailed geological information means they are increasingly used by the geoscience community as a research tool. These 3D virtual realizations are also gaining traction as an accessible means of communicating geoscience within industry and academia, and are used as sub-surface analogues from which quantitative data can be realised (e.g. Rittersbacher et al., 2014; Cawood et al., 2017). In spite of the visual appeal of virtual outcrops they are currently underexploited as a teaching resource and as a means of engaging the public with Earth Science. We attribute this to a lack of digital resources that present web-viewable virtual outcrops in an accessible and organised manner. A number of projects in other disciplines are currently using web-based 3D viewers as open-source archival/educational tools, but such resources have not yet been systematically developed in the geoscience community.

Here we present eRocK, a repository of web-viewable 3D virtual outcrops and samples. This project aims to bridge the gap between the geoscientific community, educators and the general public by providing a multi-tiered, accessible resource, suitable for users with a range of backgrounds and objectives. eRock includes virtual outcrops and samples from localities around the world, together with key information and metadata for each 3D geological model; a range of fully downloadable virtual outcrops and samples, so that researchers can perform their own analyses on the digital data; and the ability for users to upload their own 3D models. We provide a detailed workflow for researchers to download virtual outcrops from eRocK, georeference downloaded data and perform geological analysis. For the public our aim is to share an appreciation for the variety and richness of geology, as well as provide a mechanism and resource for geological education that goes beyond the visual beauty of the outcrop or specimen. We anticipate that this project will provide an important link between the academic user of virtual outcrops and the public, and a tool for engagement with, and the training of, future geoscientists.

Find us at: www.e-rock.org

@eRocktweets

References

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