



Open Access practices in the Earth Sciences

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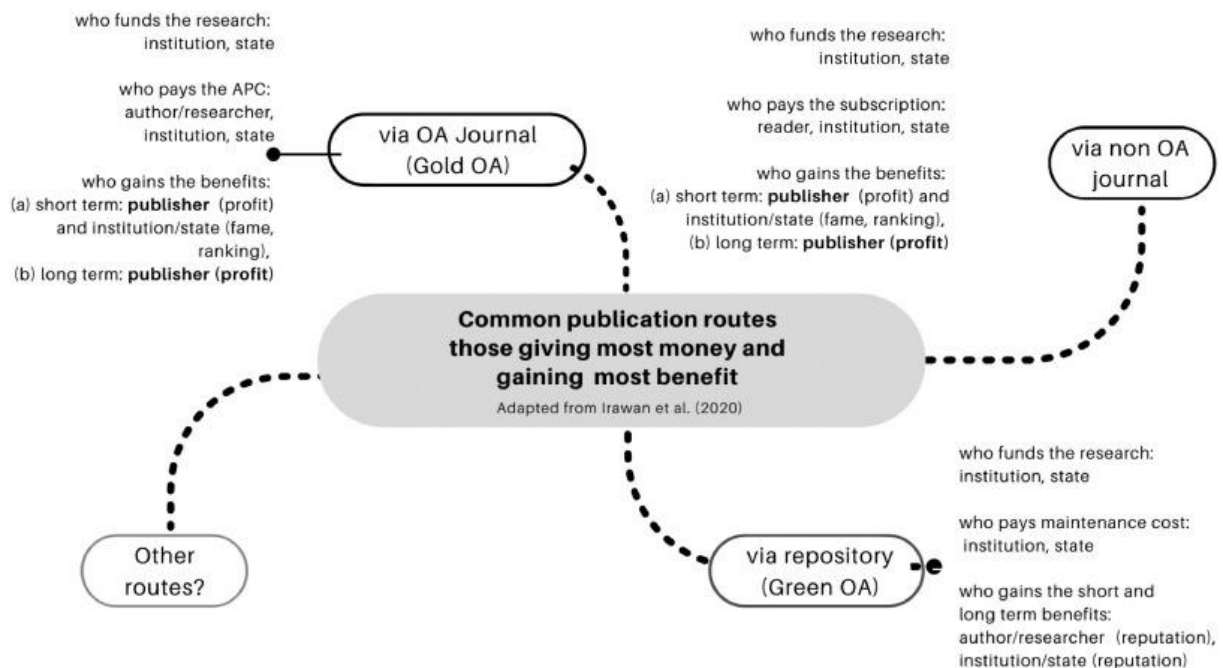
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Open Access practices in the Earth Sciences

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Throughout history, the scholarly community has increasingly made various cases for wider and easier public access to published research, which in the early 2000s became known broadly as Open Access (OA). Over the last two decades, scholarly publishing has undergone a major transformation, with the move to OA marking a radical shift in the financial models of major publishers.

[OA publication is often conflated](#) with the author-facing business model of Article Processing Charges (APCs), whereby authors (or their institutions) pay a pre-specified fee to cover the publication cost. However, OA publishing was already widespread many years before the advent of APCs, which became popular as OA publishing became increasingly commercialised.

Critically, the [majority of journals also have self-archiving policies](#) that allow authors to share their peer reviewed work in parallel via 'green' OA routes and without charge. To pursue 'green' OA, numerous stable, long-term platforms are available such as institutional repositories and collaborative services ([EarthArXiv](#) as an example). It is unfortunate that the latter is infrequently used by the geochemical community relative to the scale of the total research outputs produced, and its sustainability remains uncertain. The current APC model imposed by many journals can have deleterious effects on researchers who have no funding, especially from lower income countries.

[The academic publication routes](#) are shown on the schematic representation above, where OA decision steps highlight financial burden and benefit/reward for different stakeholders.

We discuss in details all of that in our latest article entitled ["International disparities in open access practices in the Earth Sciences"](#).

In 2018, only 24%–31% of the total number of articles indexed by either of the databases were OA articles. Six of the top ten earth sciences journals that publish OA articles were fully OA journals and four were hybrid journals. Fully OA journals were mostly published by emerging publishers and their article processing charges ranged from \$1000 to \$2200.

The rise in OA publishing has potential implications for researchers and tends to shift article-processing charges from organisations to individuals. Until the earth sciences community decides to move away from journal-based criteria to evaluate researchers, it is likely that such high costs will continue to maintain financial inequities within this research community, especially to the disadvantage of researchers from the least developed countries. However, earth scientists, by opting for legal self-archiving of their publications, could help to promote equitable and sustainable access to, and wider dissemination of, their work.

We will further discuss the latest advances regarding OA in the Earth Sciences community at next [Goldschmidt conference](#) early July 2021.

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