Activity by funders, institutions, publishers and researchers over the past decade has brought about considerable expansion in open access (OA) to peer-reviewed research articles in physics. IOP Publishing has explored data on the growth of gold OA in physics in terms of total published articles, articles by geography and OA journals, as well as considering the growth in publicly-accessible physics preprints posted to arXiv. Investigating how OA has evolved in specific subjects helps us understand where a domain is on its journey to full OA and may guide us towards adopting the strategies most likely to succeed for a given research community.

**Towards Open Physics**

**Celebrating 10 years of growth in open access to physics research**

**Articles**
- Rapid growth in open access physics articles

- 2009 OA breakdown: 3% OA
- 2019 OA breakdown: 21% OA

- 2009: 26% OA CAGR
- 2019: 73% Fully OA
- 27% Hybrid OA
- Not OA

**Journals**
- Steady rise in fully OA physics journals

- 2009: 3% fully open access
- 2019: 12% fully open access

- 2019: 18% CAGR in fully OA journals

**Physics pre-prints**
- Twice the growth rate of physics journal articles

- 2009: 3% fully open access
- 2019: 63% fully open access

**Geography**
- OA growth across the scientific superpowers

**EU28**
- 2009 OA breakdown: 4% OA
- 2019 OA breakdown: 27% OA

- 2009: 22% OA CAGR
- 2019: 63% Fully OA
- 14% Hybrid OA
- Not OA

**USA**
- 2009 OA breakdown: 4% OA
- 2019 OA breakdown: 4% OA

- 2009: 19% OA CAGR
- 2019: 64% Fully OA
- 36% Hybrid OA
- Not OA

**China**
- 2009 OA breakdown: 3% OA
- 2019 OA breakdown: 23% OA

- 2009: 37% OA CAGR
- 2019: 86% Fully OA
- 14% Hybrid OA
- Not OA

**Key findings:** OA articles are increasing much faster than subscription articles; China has overtaken the USA in its output of OA articles; hybrid OA articles and hybrid OA journals are playing an increasing role in driving growth in OA; Preprint deposition is growing faster than article publication but remains below half the annual level of article publication.

Data sourced from Dimensions, an inter-linked research information system provided by Digital Science. [www.dimensions.ai](http://www.dimensions.ai)