How to format your conference paper

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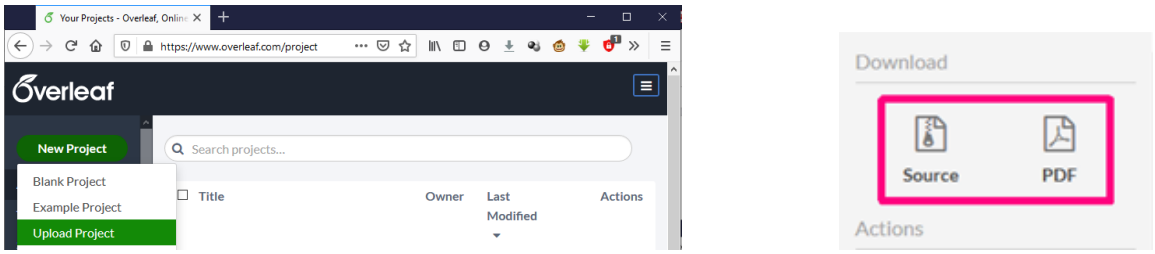
Abstract. This article serves as both the copyable template and the formatting guide for papers submitted to the ICon-MaSTEd conference proceedings in *Journal of Physics: Conference Series*. Built on the official `iopconfser` document class together with `iopcitet` and `iopart-num-long.bst`, it shows how to prepare front matter, structure sections, format equations, tables, and high-quality figures, and manage citations and bibliographies with BibTeX. It also explains how to use `\cite`, `\citep`, `\citet`, `\citet*`, and `\citeauthor` cleanly and how to export and clean BibTeX entries from major scholarly databases. Following these rules directly in your manuscript keeps formatting consistent across the volume and avoids delays during peer review and production.

1 Preparing your paper with LaTeX

Poorly formatted submissions delay proceedings publication and may be rejected prior to or during review. Reading this guide from start to finish and writing directly inside a copy of `example.tex` ensures your paper complies with IOP Publishing standards.



(a) *(b)*

Figure 1: Overleaf workflow: *(a)* uploading the template archive and *(b)* downloading both the source ZIP and compiled PDF.

1.1 Local compilation and Overleaf

You may edit and compile your paper locally (for example, TeXstudio with TeX Live or MiKTeX) or in a cloud editor such as Overleaf (`https://www.overleaf.com`). Because author names in `\citet` and numeric citation labels flow through the `.aux` and `.bbl` files, a complete build requires running `pdflatex`, then `bibtex`, then two or three additional `pdflatex` passes (or simply running `make` using the included `Makefile`).

On Overleaf, create a project via **New Project** → **Upload Project** using the template ZIP archive from the conference website (figure 1a), and click **Recompile**. When ready to submit, open **Menu** to download both the LaTeX source archive and the compiled PDF (figure 1b).

For general LaTeX background, see *The (Not So) Short Introduction to LaTeX 2ε* (`https://www.ctan.org/tex-archive/info/lshort/`) and *Learn LaTeX in 30 minutes* (`https://www.overleaf.com/learn/latex/Learn_LaTeX_in_30_minutes`).

1.2 Files included in this template

Keep the supporting class, style, and BibTeX style files in the same directory as your manuscript (table 1).

Table 1: Files provided in the template archive.

File	Purpose
`iopconfser.cls`	Official IOP Conference Series class (do not modify)
`iopcitet.sty`	Provides `\citet`, `\citet*`, `\citeauthor`, and `\citep`
`iopart-num-long.bst`	IOP numeric BibTeX style with titles, DOIs, and `\citet` data
`example.tex`	Formatting guide and copyable manuscript template
`example_bibliography.bib`	Example BibTeX database covering common entry types
`Makefile`	Automated local build (`make`) and cleanup (`make clean`)
`img/`	Sample figures (replace with your own images)

2 Template rules and front matter

Do not alter page margins, font families, font sizes, line spacing, or list definitions, do not insert manual `\vspace` adjustments between elements, and do not add headers, footers, or page numbers (IOP Publishing adds running heads and page numbers during production).

2.1 Title information

Write paper titles in sentence case: capitalize only the first word and proper nouns or acronyms, and never insert manual line breaks (\\):

```
\title{A better way to format your document for the conference}
```

Do *not* use all-caps (`A BETTER WAY...`) or title case (`A Better Way...`).

2.2 Authors, affiliations, and e-mail addresses

Unlike standard `article`, `iopconfser` has no `\maketitle` command: `\title`, `\author`, `\affil`, and `\email` typeset immediately in the order called. Format author names as initials (without full stops) followed by surname, separating names with commas and placing "and" before the final author. Use `~` for non-breaking spaces between initials and surname (e.g., `S O Semerikov`, not `S. O. Semerikov`).

Attach superscript numbers (`$^{1}$`, `$^{1,2}$`) when authors belong to multiple institutions, and provide complete postal addresses (department if applicable, institution, street, city, postal code, and country) in `\affil{...}`, followed by `\email{...}`:

```
\author{A E Smith$^{1,2}$, B~C~Jones$^{2}$ and D~E~Kovalenko$^{1}$}

\affil{$^{1}$Kryvyi Rih State Pedagogical University,
  54 Universytetskyi Ave., Kryvyi Rih, 50086, Ukraine}
\affil{$^{2}$Example Institute of Technology,
  10 Science Str., Kyiv, 01001, Ukraine}

\email{smith@example.edu, jones@example.org, kovalenko@example.edu}
```

2.3 Abstract and section headings

Every article must include an `abstract` immediately after `\email`. Keep the abstract to a **single paragraph of at most 200 words**, and do **not** include keywords or footnotes inside it:

```
\begin{abstract}
  A concise single-paragraph summary (up to 200 words).
\end{abstract}
```

Always place `\label{...}` immediately *after* `\section{...}` or `\subsection{...}` (never inside the braces of the heading title), and cite sections in full as "section 2" rather than "sec. 2":

```
\section{Methodology}\label{sec:method}
\subsection{Experimental setup}\label{sec:setup}
```

3 Tables

Number tables sequentially and refer to them in the text in full (e.g., "table 2", never "tab. 1"). Place each table inside a `table` float (`[htbp]`) near its first mention, centered with `\centering`, with the caption **above** the tabular body ending in a full stop, left-aligned columns (`l`), and `booktabs` horizontal rules only (`\toprule`, `\midrule`, `\bottomrule`) with no vertical rules:

```
\begin{table}[htbp]
  \caption{Basic table layout.}
  \label{tab:basic}
```

```
  \centering
  \begin{tabular}{llll}
    \toprule
    \textbf{Head 1} & \textbf{Head 2} & \textbf{Head 3} & \textbf{Head 4} \\
    \midrule
    1.1 & 1.2 & 1.3 & 1.4 \\
    2.1 & 2.2 & 2.3 & 2.4 \\
    \bottomrule
  \end{tabular}
\end{table}
```

This code produces table 2. For grouped headers or cells spanning multiple rows, combine `\cmidrule` from `booktabs` with `\multirow` as illustrated in table 3. Additional examples appear in the *Overleaf documentation on tables*.

Table 2: Basic table layout.

Head 1	**Head 2**	**Head 3**	**Head 4**
1.1	1.2	1.3	1.4
2.1	2.2	2.3	2.4

Table 3: Grouped columns and multi-row entries using `booktabs` and `multirow`.

Model	**Training set**		**Validation set**	
	Accuracy	**F1**	**Accuracy**	**F1**
Baseline	86.1%	0.85	84.2%	0.83
LSTM	99.1%	0.99	98.7%	0.99

4 Math equations

Use inline math (`$...$` or `\(...\)`), numbered display equations (`equation`), unnumbered display equations (`equation*` or `\[...\]`), and multi-line aligned equations (`align` or `align*` from `amsmath`). When referring to an equation in running text, always spell out "equation" in full and enclose the number in parentheses – e.g., "equation (2)" (never "eq. (2)" or "equation 2").

Notice how an inline formula such as $\lim_{n\to\infty} \frac{1}{n} = 0$ is set compactly within a line, whereas display equations receive vertical spacing and full-size operators:

```
\begin{equation}\label{eq:one_over_n}
  \lim_{n \to \infty} \frac{1}{n} = 0.
\end{equation}
```

$$\lim_{n\to\infty} \frac{1}{n} = 0. \tag{1}$$

An unnumbered display equation uses `equation*` (from `amsmath`):

```
\begin{equation*}
  S_{n} = \sum_{i=1}^{n} x_{i},
\end{equation*}
```

$$S_n = \sum_{i=1}^{n} x_i,$$

followed by a second numbered equation with a descriptive label:

```
\begin{equation}\label{eq:lim}
  \lim_{x \to 0} (1 + x)^{1/x} = e.
\end{equation}
```

$$\lim_{x \to 0} (1 + x)^{1/x} = e. \tag{2}$$

Multi-line derivations can be aligned on `&` with `align`:

$$E(t) = E_0 \exp(-\gamma t), \tag{3}$$
$$\ln E(t) = \ln E_0 - \gamma t. \tag{4}$$

With `\eqref{...}` from `amsmath`, cross-references automatically include parentheses, yielding equation (2) and equations (3)–(4). For more alignment patterns, see the *Overleaf documentation on aligning equations*.

5 Figures

Include figures directly in the source near the paragraph where they are first cited (never grouped at the end, and never inside or after the reference list). Use `\begin{figure}[htbp]` for smooth float placement, refer to figures in full as "figure 2" (never "fig. 1"), and place the caption **below** the figure ending with a full stop.

5.1 Quality, formats, and accessibility

Follow these guidelines for every figure in your manuscript:

- **Preferred formats:** Use vector graphics (`.pdf` or `.eps`) for plots, charts, and diagrams, and lossless raster formats (`.png` or `.tiff`) for screenshots or photographs. **Do not use JPEG (`.jpg`) or other lossy formats.**
- **Resolution:** Raster images must be at least 300 dpi (600 dpi preferred) at their printed size.
- **Colour and lettering:** Colour illustrations are welcome. Keep labels legible at final print size and explain symbols or curves clearly in the caption so the figure is understandable to all readers, including those using screen readers.

5.2 Standard figure layouts

For a single centered figure (figure 2), center the image and scale it using `\linewidth`:

```
\begin{figure}[htbp]
  \centering
  \includegraphics[width=0.72\linewidth]{img/sample_convergence.pdf}
  \caption{Training and validation loss across 50 optimization epochs.}
  \label{fig:single}
\end{figure}
```

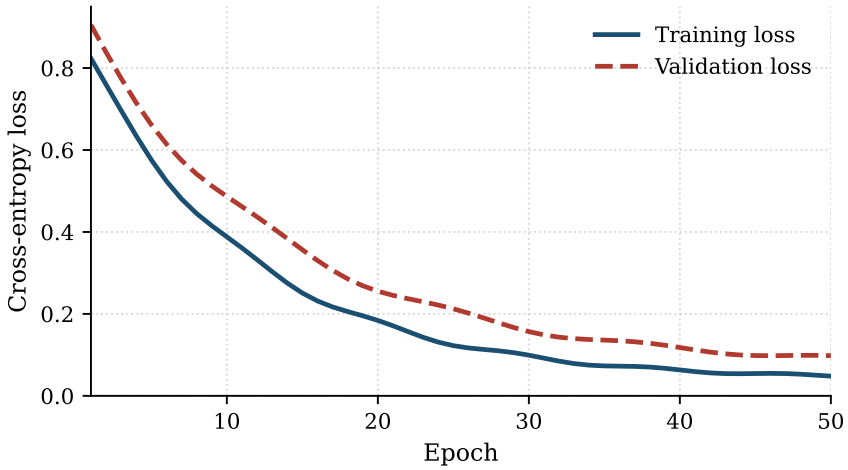


Figure 2: Training and validation loss across 50 optimization epochs.

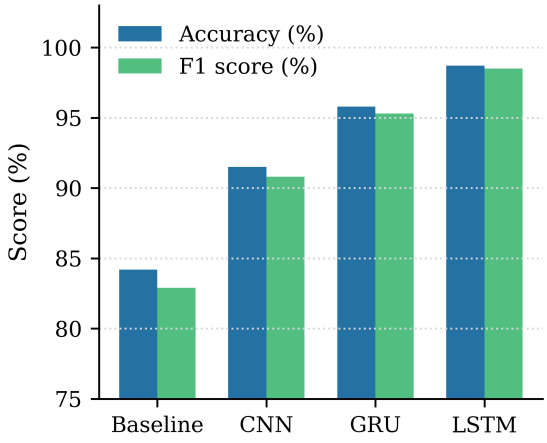


Figure 3: Model accuracy and F1 score (600 dpi lossless PNG).

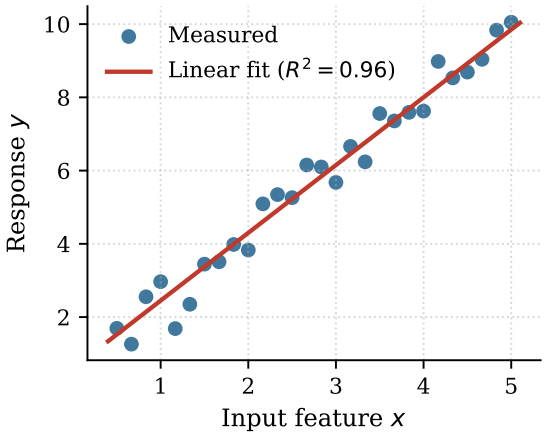


Figure 4: Measured response versus linear regression fit (vector PDF).

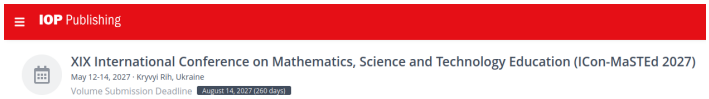


Figure 5: Conference banner placed alongside a right-hand caption.

To save vertical space, place two independent figures side by side using `minipage` environments separated by `\hfill` or `\hspace{1.5pc}` (figures 3 and 4):

When a figure is relatively compact, its caption may sit beside it using a bottom-aligned `minipage` (figure 5):

When a single logical figure has multiple panels, label the parts *(a)*, *(b)*, *(c)*, … directly inside the image files and provide one shared caption instead of separate sub-captions (figure 6):

```
\begin{figure}[htbp]
  \centering
  \begin{minipage}[b]{0.47\linewidth}
    \centering
    \includegraphics[width=\linewidth]{img/part_a.eps}
  \end{minipage}\hfill
  \begin{minipage}[b]{0.47\linewidth}
    \centering
    \includegraphics[width=\linewidth]{img/part_b.eps}
  \end{minipage}
  \caption{Damped harmonic response: \emph{(a)} displacement $u(t)$ and
    \emph{(b)} velocity $v(t)$.}
  \label{fig:multipanel}
\end{figure}
```

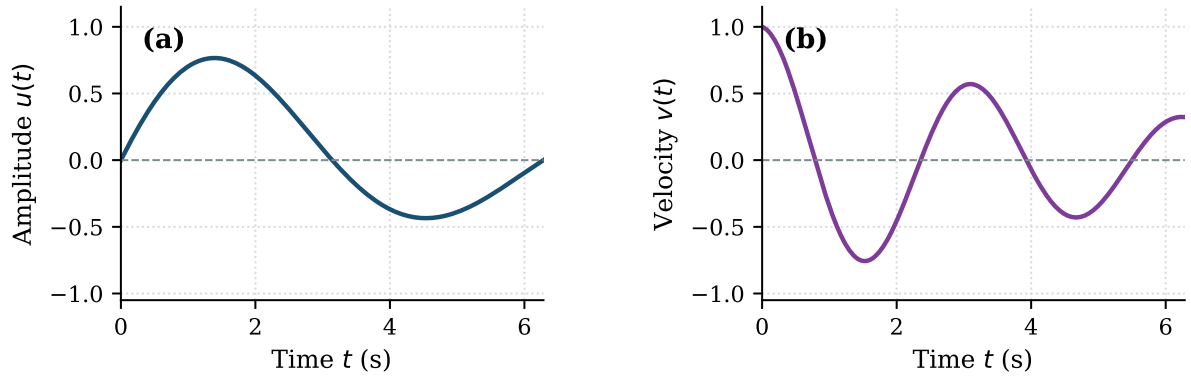


Figure 6: Damped harmonic response: *(a)* displacement $u(t)$ and *(b)* velocity $v(t)$.

6 Citations and bibliographies

In IOP Publishing's production workflow, reference lists are linked electronically through CrossRef. **Accurate, complete BibTeX entries are therefore essential; missing or malformed bibliographic data can delay publication.**

6.1 Reference list requirements

A complete reference should enable the reader to locate the work in print or online, including:

- author surname(s) and initials (or editors when no author is given);
- year of publication;

- title of the article, chapter, book, or report (and journal or proceedings title);
- volume number and issue number (if applicable);
- city of publication and publisher in parentheses for books and proceedings;
- page range or electronic article identifier, plus DOI (or URL when no DOI exists).

List up to ten authors; if there are more than ten, give the first author followed by *et al* (no full stop). Leave journal titles in full if you are unsure of the standard abbreviation, and never use *loc. cit.* or *ibid.* Avoid citing unpublished conferences or reports unless accepted with a known publication venue. A thesis may be cited if no subsequent published work has superseded it and it is accessible through a library or repository.

Using BibTEX is mandatory. Load `\bibliographystyle{iopart-num-long}` in the preamble and place `\bibliography{bibfile}` (without the `.bib` extension) immediately before `\end{document}`.

6.2 Citation commands

The template pairs `cite.sty` with `iopcitet.sty` and `iopart-num-long.bst` to support both numeric brackets (`\cite`, `\citep`) and author-integrated in-text citations (`\citet`, `\citet*`, `\citeauthor`, `\citeauthor*`):

- **Numeric citation:** `\cite{Jony_Arnob_2024}` or `\citep{Jony_Arnob_2024}` → [1].
- **Multiple works (auto-sorted and compressed):**
  `\cite{Kalitkin:1975, Kerley2003, Rutberg2004}` → [2–4].
- **Numeric citation with note:** `\cite[p.~30]{Jony_Arnob_2024}` → [1, p. 30].
- **In-text citation, 1 author:** `\citet{Kerley2003}` → Kerley [3].
- **In-text citation, 2 authors:** `\citet{Jony_Arnob_2024}` → Jony and Arnob [1].
- **In-text citation, 3+ authors or `and others`:**
  `\citet{teplytskyi2019trainingfutureteachersnatural}` → Teplytskyi *et al* [5];
  `\citet{zamfir2005:132te-beta-enam04}` → Zamfir *et al* [6].
- **In-text citation with note or multiple keys:**
  `\citet[p.~30]{Kerley2003}` → Kerley [3, p. 30];
  `\citet{Kalitkin:1975, Kerley2003}` → Kalitkin and Kuz'mina [2], Kerley [3].
- **Full author list (suppress *et al*):**
  `\citet*{teplytskyi2019trainingfutureteachersnatural}` → Teplytskyi, Teplytskyi, Semerikov and Soloviev [5].
- **Author names only (still registers the work in References):**
  `\citeauthor{Kerley2003}` → Kerley;
  `\citeauthor*{teplytskyi2019trainingfutureteachersnatural}` →
  Teplytskyi, Teplytskyi, Semerikov and Soloviev.

Because author labels are cached in the `.aux` file, remember to run `bibtex` followed by at least two `pdflatex` passes so `\citet` and `\citeauthor` show names rather than bare numbers or **?**.

7 BibTEX entry examples

All examples below correspond directly to entries in `example_bibliography.bib`.

7.1 Journal articles and J. Phys.: Conf. Ser. *proceedings*

A standard journal article uses `@article`. Protect specific capitalization (such as acronyms or proper nouns) with extra braces inside `title`, separate multiple authors with `and`, use `--` for page ranges, and use `number` (not `issue`) for the issue number [1]:

```
@article{Jony_Arnob_2024,
  author  = {Jony, Akinul Islam and Arnob, Arjun Kumar Bose},
  title   = {{A long short-term memory based approach for detecting
              cyber attacks in IoT using CIC-IoT2023 dataset}},
  journal = {Journal of Edge Computing},
  year    = {2024},
  volume  = {3},
  number  = {1},
  pages   = {28--42},
  doi     = {10.55056/jec.648},
  url     = {https://acnsci.org/journal/index.php/jec/article/view/648}
}
```

Articles published in *Journal of Physics: Conference Series* or other IOP journals are formatted as regular `@article` entries, using the 6-digit article number in `pages` [7]:

```
@article{Striuk_2022,
  author  = {A M Striuk and S O Semerikov},
  title   = {Professional competencies of future software engineers in the
             software design: teaching techniques},
  journal = {Journal of Physics: Conference Series},
  year    = {2022},
  volume  = {2288},
  number  = {1},
  pages   = {012012},
  doi     = {10.1088/1742-6596/2288/1/012012}
}
```

7.2 Conference proceedings, edited books, and theses

For a paper in published conference proceedings, use `@inproceedings` (or `@incollection` for an authored chapter in an edited volume) [8,9]:

```
@inproceedings{Smith2025:conf,
  author    = {Smith, A. and Doe, J.},
  title     = {Interactive simulation workflows for {STEM}
               teacher preparation},
  booktitle = {Proceedings of the International Conference on Mathematics,
               Science and Technology Education},
  editor    = {Brown, P. and Green, R.},
  series    = {Lecture Notes in Educational Technology},
  volume    = {12},
  year      = {2025},
  publisher = {Example Academic Press},
```

```
  address   = {London},
  pages     = {45--58}
}
```

For books [10], books in a numbered series [11], specific book chapters [12], and dissertations [13], use `@book`, `@inbook`, and `@phdthesis` (or `@mastersthesis`):

```
@book{Dirac:1958,
  author    = {P. A. M. Dirac},
  title     = {The Principles of Quantum Mechanics},
  series    = {The International Series of Monographs on Physics},
  number    = {27},
  edition   = {4},
  publisher = {Clarendon Press},
  address   = {Oxford},
  year      = {1967}
}

@phdthesis{Doe2024:thesis,
  author  = {Doe, J.},
  title   = {Adaptive Virtual Laboratories in Physics Education},
  school  = {Example University},
  address = {Kyiv},
  year    = {2024}
}
```

Specific pages or chapters of any reference can also be cited inline:
`\cite[chapter~4, pp.~98--105]{Dirac:1958}` → [11, chapter 4, pp. 98–105].

7.3 Preprints, technical reports, patents, and online resources

- **Institutional preprints and technical reports** use `@techreport` with `type`, `number`, and `institution` [2,3].
- **Patents** can be entered as `@misc` using `howpublished` [4]:

  ```
  @misc{Rutberg2004,
    author       = {Rutberg, {\relax Ph} G and Safronov, A A
                    and Shiryaev, V N},
    title        = {Three-phase ac plasma generator},
    howpublished = {Patent RU 2231936},
    year         = {2004}
  }
  ```

- **arXiv preprints** use `eprint` and `archive` [5]:

  ```
  @misc{teplytskyi2019trainingfutureteachersnatural,
    author  = {Oleksandr Teplytskyi and Illia Teplytskyi and
               Serhiy Semerikov and Vladimir Soloviev},
    title   = {Training future teachers in natural sciences and
               mathematics by means of computer simulation: a social
               constructivist approach},
  ```

```
  year    = {2019},
  eprint  = {1907.09726},
  archive = {arXiv},
  url     = {https://arxiv.org/abs/1907.09726}
}
```

- **Software, datasets, and web resources** use `@misc` with `url` and the access date in `note` [14].

7.4 Non-Latin sources

When citing a publication written in a non-Latin script (for example, Ukrainian), transliterate all bibliographic fields (authors, journal, publisher, city) and follow the transliterated title with its English translation in square brackets [15]. When a journal has no volume number, supply `number` (not `issue`), which `iopart-num-long` formats as "no 4":

```
@article{IA2000,
  author  = {Semerikov, S. O. and Soloviov, V. M. and Teplytskyi, I. O.},
  year    = {2000},
  title   = {Instrumentalne zabezpechennia kursu kompiuternoho modeliuvannia
             [{I}nstrumental support of the course of computer modeling]},
  journal = {Kompiuter u shkoli i simi},
  number  = {4},
  pages   = {28--31},
  url     = {https://lib.iitta.gov.ua/704129/}
}
```

7.5 Special fields in `iopart-num-long.bst`

- **Lettered journal sections (`section`):** Under IOP style, section names appear in Roman type after the italic journal title (e.g., *Journal of Physics* A: Mathematical and General [16]). Specify `section = {A: Mathematical and General}` (or `section = {A}`), and `iopart-num-long` automatically strips duplicate trailing section letters from `journal` or `volume`.

- **Multivolume books (`volumetitle`) vs. series (`series`):** A book in a series prints the series title and number in parentheses after the book title [17, 18]. An individual volume of a multivolume work prints `volume` and optional `volumetitle` directly after the book title [19–22].

- **Electronic IDs and collaborations:** `eid`, `numpages`, `collaboration`, `doi`, `eprint`, and `url` are all supported [23].

7.6 Exporting and cleaning BibTeX entries

Avoid typing BibTeX entries by hand whenever possible: use the BibTeX export tools in OJS (figure 7a), ACM Digital Library (figure 7b), Scopus (figure 7c), IEEE Xplore (figure 7d), ScienceDirect (figure 7e), Web of Science (figure 7f), or CrossRef/Zotero.

After exporting, quickly check four things:

1. Rename `issue` to `number` (the style ignores `issue`).

2. Use `--` for page ranges (e.g., `28--42`) and protect acronyms inside `title` with braces (e.g., `{STEM}`, `{IoT}`).

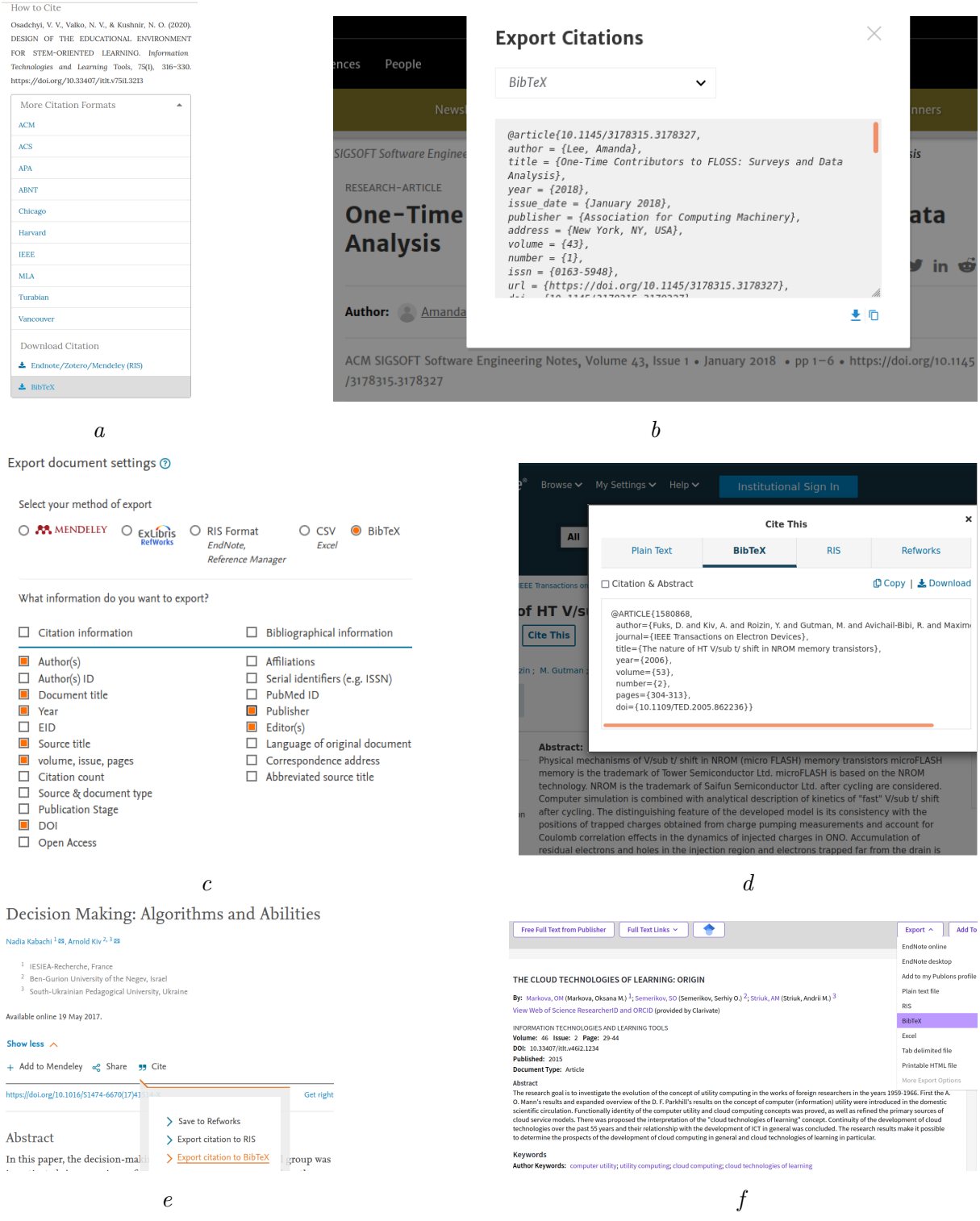


Figure 7: Exporting citations to BibTeX from major scholarly databases.

3. Separate authors strictly with `and`, never commas or semicolons between authors.

4. Provide a `doi` (e.g., `10.1088/...`); if `url` duplicates the same `doi.org` link, it is automatically suppressed.

Acknowledgments
Authors wishing to acknowledge assistance from colleagues, technical staff, or funding agencies should place an unnumbered `\section*{Acknowledgments}` section immediately after the last numbered section (before `ORCID iDs` and the references).

ORCID iDs
Include author ORCID iDs between the acknowledgments and the appendices/references:

A E Kiv `https://orcid.org/0000-0002-0991-2343`
S O Semerikov `https://orcid.org/0000-0003-0789-0272`

```
\section*{ORCID iDs}
\noindent
A E Kiv \url{https://orcid.org/0000-0002-0991-2343}\\
S O Semerikov \url{https://orcid.org/0000-0003-0789-0272}
```

If your paper has no acknowledgments section, place `\section*{ORCID iDs}` immediately after the conclusion.

A Appendices
Technical details that would interrupt the main flow may be placed in one or more appendices after `ORCID iDs` and before `\bibliography{...}`. Calling `\appendix` switches `\section` numbering to `Appendix A`, `Appendix B`, and so on (or use `\section*{Appendix}` for a single unnumbered appendix).

Note that `iopconfser` inherits sequential equation, figure, and table numbering from the standard `article` class. If your appendix contains numbered equations, figures, or tables and you prefer appendix-prefixed labels such as (A.1), figure A1, and table A1, add these lines immediately after `\appendix`:

```
\appendix
\numberwithin{equation}{section}
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