

EDITORIAL

TYPES OF ARTICLES IN JM³

In this editorial I would like to continue my reflections on the last three years. In the last editorial, I showed the number of articles published from different countries, the distribution of articles as a function of number of authors, distribution by continent, by type of organization, and by topic, and the number of articles in each issue. Here, I would like to define the types of articles that this journal has published and those we plan to publish.

The most frequently published articles are the regular articles. These are reports of the result of innovative and useful work in the JM³ fields, are prepared rigorously and comprehensively, and are worthy of archiving. Naturally, as is true for all types of articles, they were reviewed by experts in the field, and, with rare exceptions, revised to improve their quality.

There are also articles in special sections, which appear from time to time to address special topics of interest in the JM³ fields. The reasons for special sections are to address pressing topics of vast interest and to shape the quality and the content of JM³. The regular articles for special sections are no different from those in the regular section of the journal. They have to be reports of innovative and useful work and be well written for our readers. Needless to say, regular articles for special sections go through the same rigorous review process as those in the regular section.

Communications papers can appear in the Communications section of the journal or as part of a special section. They are short communications on original work, comments on recent papers, and errata, generally not exceeding two printed pages in length. Original work will be reviewed with the same rigor as regular journal articles.

Overview articles are uniquely for special sections. It is often desirable to give the readers an overview of the field highlighted in a particular special section. The submission is often suggested by the guest editor to a prospective author. The guest editor has a good idea of the articles to appear in the special section and may need an overview article to connect them. The guest editor may also wish to have a survey of the field for the readers. Overview articles are reviewed with these perspectives.

We plan to publish in-depth review articles written by authorities in the field. A review article lists key equations, experiments, and the corresponding results on a technical topic of interest. It explains them with insight, pros and cons. The material may be presented in chronological order with the historical significance stated. However, the most important element is the technical teaching to the readers, not just the history. It has a tutorial element and completeness, so that the readers will find all they wish to learn on this particular field in this review article. That is why the technical part should be broad, deep, and

consistent, and the reference list should be as thorough as possible. The author may use up to a year to write this masterpiece. It is wise for the author to send me an outline before the venture. I will personally invite the author to write such an article.

JM³ Letters were instated in July 2003. They are intended for rapid publication of short technical communications of significant interest in the JM³ fields. It may be a piece of valuable work that the authors do not have time to expand into a full paper. Or, they may like the JM³ community to know about the valuable work before they spend more time to complete a full paper. JM³ Letters will appear first in the online journal (e-First) and then in the printed journal, with a fast-tracked production process to further accelerate their publication. We consider these letters prestigious enough to warrant special attention. As a result, the reviewers will give special attention to the significance and quality, and will process them quickly. The length of JM³ Letters may not exceed three printed journal pages. A brief cover letter setting forth the significance of the paper must accompany the manuscript.

The most unique article that JM³ has published is the translation from German of the classic article by Fritz Zernike on diffraction theory published 68 years ago in the Dutch journal *Physica*, containing the introduction of the Zernike polynomials. These polynomials describe the aberration of imaging systems in cylindrical coordinates and have a unique orthogonal property that makes them the universal choice of analytic tool to define and to optimize diffraction-limited large-field high-NA lenses. Translating classic papers such as this into English and republishing in JM³ make the classics accessible to readers in the JM³ fields. Occasionally, we will publish such articles if the original publication is very difficult to find or in a less familiar language, the new publication or translation is useful for readers of JM³, the work is well quoted, well respected, and well established, and copyright is properly handled.

We will continue to cover existing and new article types as long as they are useful to our readers.

Happy reading!

Burn J. Lin,
Editor-in-Chief

