

Include a statement on the cover page about the type of manuscript you are submitting, the target journal, and current status. Examples include:

- ▶ Submitted as an Article to *Quarterly Journal of the Royal Meteorological Society*;
- ▶ Revised as a Picture of the Month for *Monthly Weather Review*;
- ▶ In preparation for submission to *Journal of the Atmospheric Sciences* for the Special Collection on “Spontaneous Imbalance”;
- ▶ ATM 495 Research Project; and
- ▶ Research Experience for Undergraduates Final Report.

Always include the date of last revisions on the title page to avoid confusion about the most recent version. Having an accurate date on the manuscript also helps journal editors and reviewers who may be juggling multiple versions of your manuscript ensure that they are looking at the most recent version. Finally, include the name, mailing address, and e-mail address of the corresponding author.

A well-prepared abstract enables readers to identify the basic content of a document quickly and accurately, to determine its relevance to their interests, and thus to decide whether they need to read the document in its entirety. —ANSI (1979), cited by Robert Day and Barbara Gastel (2006, p. 52)

4.4 ABSTRACT

The first section of the manuscript is the abstract (or summary as it is called in some journals). Because the abstract is a synopsis of the manuscript, the abstract is often the last part of the manuscript written. Only when authors have an overview of their entire manuscript do many of them write the abstract. Some authors draft the abstract early in the writing process, for many of the same reasons that they may write the title first. By the time the manuscript nears completion, check the content of the abstract against the rest of the manuscript for consistency.

Effective abstracts describe the contents of the manuscript and help potential readers know whether the manuscript is of interest to them or not. As discussed in Section 4.2, the abstract is the first part of the text that most readers read, and sometimes the only part of the text that gets read beyond the title. Therefore, a compelling abstract attracts the audience to your manuscript and should contain the basic information in Table 4.3.

Table 4.3 Information contained within the abstract (Day and Gastel 2006, p. 53)

1. Principal objectives and scope of the investigation
 2. Methods employed
 3. Summary of the results
 4. Principal conclusions
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Many journals have limits on the length of the abstract, so authors should always read the Instructions to Authors within the journal's end pages or on the Web page. Most abstracts should not exceed about 250 words. Abstracts for dissertations, of course, may be longer. Because of this short length, the abstract should be dense with content. Avoid sentences that are so vague as to be worthless (e.g., "Differences between two numerical forecast models are examined, and the cause of these differences is discussed."). Be specific. As in the title, avoid abbreviations and unnecessary jargon in the abstract. Too much introductory material can burden the abstract; instead focus on the research results.

Because abstracts of published papers often appear alone on Web pages and abstracting services, abstracts should not have any referential material in them: no undefined abbreviations, figures, tables, or external references. Citations to specific papers should be avoided.

Even if your target journal does not require an abstract for your manuscript, consider writing one anyway. Not doing so will limit potential readers who may not find your article when doing literature searches or may not know the article is of interest to them solely from the title.

4.5 KEYWORDS

Although not required for all journals, keywords are used to organize by topic the articles in the journal's year-end index, for abstracting services such as *Meteorological and Geophysical Abstracts*, and to aid those performing electronic searches. If authors do not choose their own keywords, the editor will. Prof. John Thuburn, editor of the *Quarterly Journal of the Royal Meteorological Society*, says, "[M]y advice to the person choosing keywords for their own article would be to put themselves in the position of someone doing the search and try to imagine what keywords someone would search for in the hope of finding the material in the article." In this way, the keywords should be specific information about the manuscript not already in the title, but not too general either (e.g., picking "meteorology" as a keyword for your paper being submitted to *Meteorology and Atmospheric Physics*). Avoid unnecessary prepositions and articles. Commonly recognized acronyms (e.g., CAPE, NWP) are allowed at some journals. List the keywords alphabetically or in the manner expected by the journal.

4.6 INTRODUCTION

The first numbered section of the manuscript is the introduction. After the title and abstract, the introduction is one of the most frequently read parts of a paper, so the importance of a good introduction cannot be overstated. A