# Pecora 20 Instructions for Authors

With this memo you will receive your Instructions to Authors. You have satisfied copyright requirements when you submitted the Abstract for this paper. Your abstract has been assigned to a conference session and you are invited to submit a full paper, which will be published in the Conference Proceedings. Some full papers, based on conference analysis, may be forwarded to a rigorous double-blind peer review for potential inclusion in the ASPRS *Photogrammetric Engineering & Remote Sensing* Journal.

Note that only papers for which at least one author has paid the registration by **October 13, 2017**, will be published in the proceedings. All accepted technical program abstracts will be published in the conference proceedings.

## *******VERY IMPORTANT*******

**All proceeding content (papers, posters, slides) must be received no later than 5:00 pm EST on**
**Friday, October 13, 2017.**

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Please keep papers and posters to no more than **12** pages, preferably 8 pages.

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## FAQ

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A 10-point Times Roman on 11-point leading is the size we ask you to use.

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The deadline is set so that we have time to prepare the proceedings and have them electronically available at the conclusion of the Forum.

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You can replace the paper until the start of the conference on November 13, 2017

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Presenters who submit papers or posters for publication in the conference proceedings MUST REGISTER according to the Presenter Registration Policy listed in the Acceptance Letter you received from the Technical Program Co-chairs.

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The Conference Proceedings are intended to be helpful to attendees and others who use the proceedings to read the individual submissions. **THE FOLLOWING INSTRUCTIONS WERE TYPED IN THE REQUIRED FORMAT. SEE SAMPLE AT THE END OF THESE INSTRUCTIONS.**

**Key words:** (please insert up to 5 key words from the Topical Areas to help make your paper searchable)

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## MANUSCRIPT

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Except for the headings and subheadings, all text should be single-spaced across the page. **DO NOT SUBMIT COPY IN TWO-COLUMN FORMAT. Set the margins for an 8.5 x 11" sheet of paper. Set all margins at 1" on each side and at the top and bottom.** These margins give a 6.5" x 9" area in which to type the copy. Copy should be clean, dark, and readable. The type font should be Times or Times Roman, 10 pt. for the body copy, 12 pt. for the main headings, 11 pt. for subheads. **DO NOT USE the Paragraph feature to separate your lines of text or paragraphs.** We end up having to remove all of that formatting and it takes hours.

### Length

Please keep your manuscripts to no more than 12, preferably 8 pages, including abstract, figures, tables and references (as defined above).

## TITLE AND ABSTRACT

### Title

The title should appear in CAPITAL LETTERS without underlining, centered on the page, beginning at the top margin of the first page. More than one line may be used, but single-space between lines. Type the author name(s) and affiliation in upper and lower case letters centered under the title (as in the example above). In the case of multi-authorship, group names by firm or organization. Affiliation should include position(s) of the author(s), the institution(s), address(es) and email address(es).

### Abstract

Start with a copy of the abstract (**limited to 500 words)** that summarize the content of the paper. The abstract should be typed in one wide column across the whole page, as shown in the beginning of these Guidelines under "PURPOSE." Leave 2 blank line spaces between the author information and the abstract.

## MAIN BODY OF TEXT

Type text single-spaced, with two line spaces between paragraphs and first order headings. Indent beginning of each new paragraph .25 inches from left margin. There are NO spaces between paragraphs within a section.

## MAJOR HEADINGS

**Headings**

Major, or first order, headings are to be typed in 12 point boldface capital letters, centered over one column, as above this paragraph.

**Subheadings**

Type subheadings, or second order headings, in 11 point upper and lower case letters, boldface, and place flush left on a separate line.

***Subsubheadings.*** Subsubheadings, or third order headings, should be indented 1/4 in., with text following on the same line, as in this sentence.

***Footnote.*** Mark footnotes in the text with an asterisk (*); use a double asterisk (**) for a second footnote on the same page. Place footnotes at bottom of the page, separated from the text by a horizontal line.

***Pagination.*** **Do not put page numbers as footers on your paper**.

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References should enable a librarian to supply the quoted paper or book to the reader. References should be cited in the text thus: (Smith, 1987b) and listed in alphabetical order in the reference section. Make sure that the titles of books and periodicals are italicized. Names of journals can be abbreviated according to the "International List of Periodical Title Word Abbreviations." When in doubt, write the names in full. We see the most inconsistencies with the References section of every paper. If we see obvious errors, we will make corrections, but this is not guaranteed. **It is the responsibility of the author of the paper to make sure the references conform to the proper style**. The following formats should be used:

***References from JOURNALS:**

Smith, J., 1987a. Close range photogrammetry for analyzing distressed trees, *Photogrammetria*, *42*(I):47-56.

***References from BOOKS:**

Smith, J., 1989. *Space Data from Earth Sciences,* Elsevier, Amsterdam, pp. 321-332.

***References from NON-REFEREED LITERATURE:**

a) Smith, J., 1987b. Economic printing of color orthophotos, Report KRL-01234, Kennedy Research Laboratories, Arlington, VA-USA.

b) Smith, J., 1988. Remote sensing to predict volcano outbursts, In: *Int. Arch. Photogramm. Remote Sensing*, Kyoto-Japan. Vol.x Part.J, pp. 456-469.

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***Placement***. Although figures and tables are usually aligned horizontally on the page, large figures and tables may be turned on their sides. If a figure or table is turned sideways, be sure that the top is on the left-hand side of the page.

***Captions.*** All captions should be typed in upper and lower case directly beneath the illustration. Use single spacing if a caption uses more than one line.

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## IMPORTANT

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**See sample paper layout on next three pages. This is a sample only and contains sections from several papers.**

# AN INTERNET ACCESSIBLE DATA AND INFORMATION SYSTEM FOR RESOURCE MANAGERS

**Amelia Budge**, Manager
**Stan Morain**, Director
Earth Data Analysis Center
University of New Mexico
Albuquerque, NM 87131
abudge@spock.unm.edu
smorain@spock.unm.edu

## ABSTRACT

Earth Data Analysis Center at the University of New Mexico, under an Earth Science Information Partnering (ESIP) agreement with NASA, is designing an Internet-accessible application for land management applications. Land and resource managers will be able to manipulate spatial and spectral data using a variety of functions to extract information from multi-sensor, multi-temporal, and multi-resolution sources. The business case for the prototype focuses on agencies that manage hundreds or thousands of small, and highly fragmented, land holdings dispersed over regional geographic areas. The intent of the information system is to provide a coordinate-based tool for retrieving spectral, spatial, and socioeconomic data pertinent to each land unit, and to then process these data into information relevant to the manager's need. Spectral data currently included in the test area are Landsat TM, AVHRR, ATLAS, TRMM, Radarsat, and MASTER imagery. Future data sets, as they become available, will include ETM+, MODIS, ASTER, and ALI imagery. Among the several information extraction options for managers will be fly-throughs, temporal trends, economic context, environmental parameters, and eventually, economic modeling scenarios.

**KEYWORDS:** land management applications, satellite data, resource managers, open source

## INTRODUCTION

Satellite data have been available for over 30 years, but they have not been accessible easily to the public. Many of the satellite programs, such as Landsat, were designed as science missions that acquired data for scientific applications. Practical applications of these data were not the primary concern. Data obtained by most Earth observing missions have been processed using algorithms and data formats developed by scientists for their own research purposes. Furthermore, databases created to house information on these satellite data and their derived products, and access to these databases was designed by, and for, scientists. Therein lies the problem.

NASA received a Congressional mandate to make their data and products available to a broader user community – beyond the science community. However, data formats and access to these data are cumbersome and in some cases, impossible for non-science users. One of the broader community set of users are resource managers, such as land managers, water managers, and wildlife managers, to name a few. These users, for the most part, are not familiar with the scientific jargon utilized in data access systems such as NASA's EOSDIS, the Earth Observation System Data and Information System. Using the EOSDIS web site is not intuitive and is difficult to navigate if one is not familiar with the terminology. This paper focuses on the efforts of the Earth Data Analysis Center, at the University of New Mexico, to develop products from NASA sensor data, and to develop an Internet accessible, user-friendly delivery system that allows all users easy access to these data and products.

## NASA EARTH SCIENCE INFORMATION PARTNERS

The Office of Earth Science (EOS) at NASA is funding an initiative known as the Earth Science Information Partners (ESIPs), which consists of twenty-four cooperative agreements between NASA and universities and private enterprise to advance the uses of NASA-sponsored science research and data beyond the scientific community. In short, their mission is to employ these data and their derived products in applications for broader user communities, such as local governments and industry. Of the twenty-four partner-ships, twelve are focusing on developing data and products for global applications and to provide subsetted products for local uses. These partners (known as ESIP 2s) are primarily universities that are engaged in research projects on a global scale. The other twelve partners constitute a mixture of industry and universities (ESIP 3s) that are focusing on processing NASA datasets into value-added, derived products on local and regional scales that can be ingested by non-science users such as museums, schools, fisheries, farmers, and resource managers (Table 1).

**Table 1. ESIP 2 and ESIP 3 Partners**

| | |
|---|---|
| University of Rhode Island | Bay Area Shared Information Consortium |
| University of New Hampshire | California Resource Agency |
| University of California – Los Angeles | University of New Mexico |
| University of California – Santa Barbara | University of Maryland |
| Jet Propulsion Laboratory (Genesis) | University of North Dakota |
| University of Maryland | Rice University |
| IBM – T.J. Watson Research Center | Planet Earth Science, Inc. |
| Jet Propulsion Laboratory (Ocean ESIP) | Reading Information Technology, Inc. |
| Global Hydrology and Climate Center | Scientific Fishery Systems |
| George Mason University | MRJ Technology Solutions, Inc. |
| Scripps Institute of Oceanography | University of Minnesota |
| Michigan State University | NBC Subsidiary (WRC-TV), Inc. |

The Earth Data Analysis Center (EDAC) at the University of New Mexico was awarded an ESIP 3 cooperative agreement in 1998. It is a five-year initiative, to develop custom applications and products for resource managers in the Upper Rio Grande Basin (Figure 1). The Basin extends from Ft. Quitman, Texas (south of El Paso) to the headwaters of the Rio Grande in southern Colorado. Within the Basin, land management responsibilities are characterized by a highly fragmented geographic distribution. During the life of the project, EDAC will prototype products, information, and a customized delivery system to address land management, water management, and air quality assessment applications and needs. Development of the prototype delivery system and early derived products focuses on the needs of local land management agencies such as the New Mexico State Land Office, the New Mexico State Forestry Division, the Bureau of Land Management, and the U.S. Forest Service. These stakeholders are working closely with EDAC to identify Internet products that are responsive to their operational needs.

## EDAC's PROTOTYPE PRODUCTS

EDAC's deliverables for the project are twofold. First, an Internet, user-friendly data access and delivery system is required to allow users quick and easy access to customized products and information. Second, these products and information must be presented in packages that are digested easily by practicing resource managers who most likely are not schooled in image processing technology. Ultimately, in accordance with the cooperative agreement, EDAC is required to develop its system and products in such a way that they are sustainable at the close of the five-year project. With these challenges and goals identified, EDAC's approach is to develop a prototype that will be beta tested by its stakeholders before release as a version 0 (V0) product.

### Digital Orthophoto

The Washington Department of Natural Resources, Resource Mapping Section produced a digital orthophoto for the study area using a softcopy system (Socket Set). The source imagery was 1:12,000 color aerial photography. Orthorectification was accomplished using a canopy surface model developed using autocorrelation techniques. The final image used a 0.3m (1 foot) pixel.

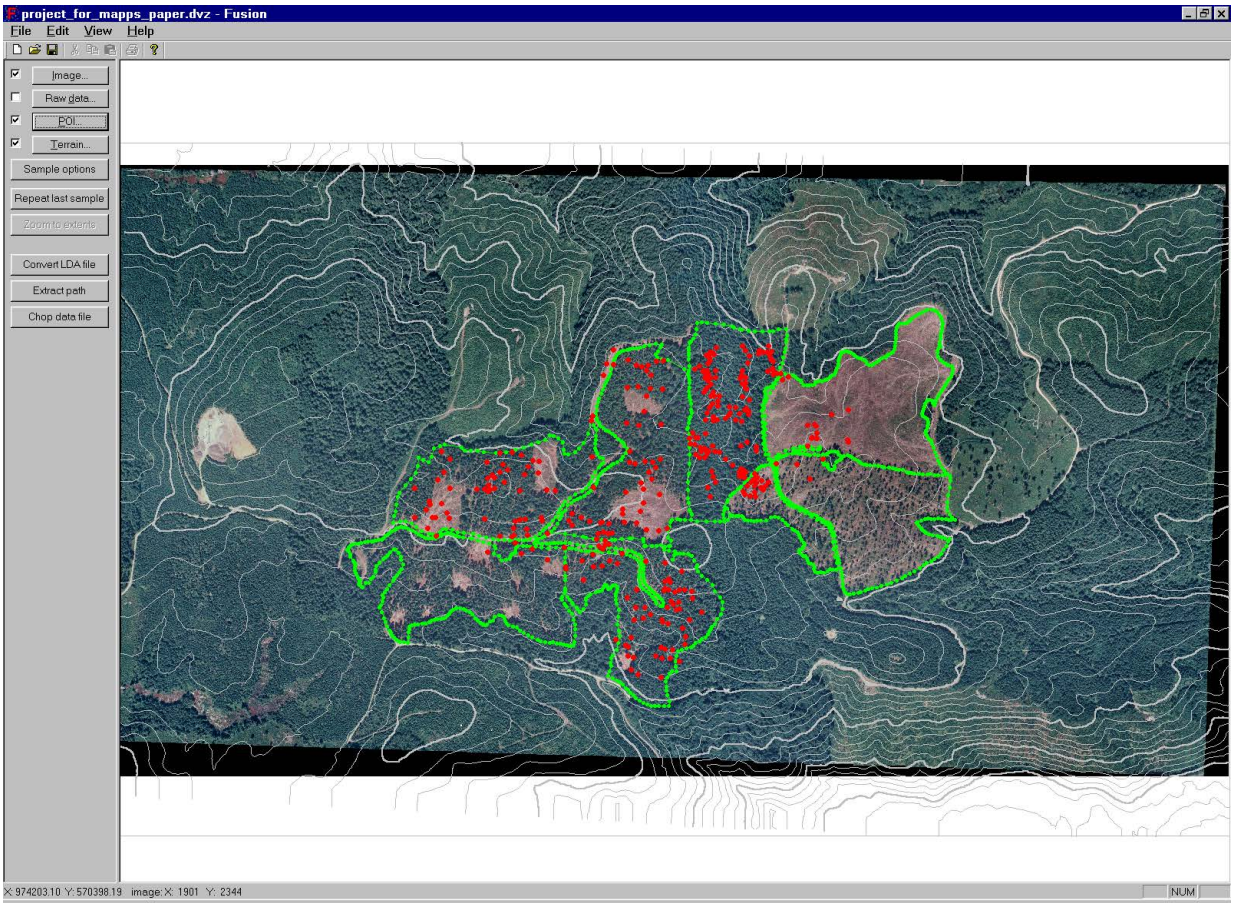


**Figure 1.** Screenshot of FUSION showing an orthophotograph of the Capitol Forest study site, 15-meter contours created from the digital terrain model, control points (red), and treatment area boundaries (green).

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