

ISSI International Team on  
3D RECONSTRUCTION METHODS FOR THE STEREO MISSION  
(ISSI, 15-17 May 2006, 3rd meeting)

**Minutes of meeting**

**Participants :** Frédéric Auchère, Thierry Dudok de Wit, Jean-François Hochedez, Bernd Inhester, Antoine Llebaria, Angelos Vourlidas.

Absent : Jean-Pierre Wuelser.

## 1 Review of recent developments

(1/2 day)

- F. Auchère : benchmark data sets of off-disk structures in polar regions, for Stereo.
- A. Vourlidas : SECCHI update. There will be a high cadence campaign for filament studies in Jan-Feb 2007, together with Solar B.
- J.-F. Hochedez : update about optical flow method + image analysis methods.
- T. Dudok de Wit : presentation of the CMS based on Wiki interface.

## 2 Wiki interface

This CMS provides a flexible interface for accessing and searching documents in a database. A student in Orléans will work two months on it as part of his project. Other interfaces (Wikimedia rather than Mambo) may be more appropriate, this remains to be checked. A first version should operate at the next SECCHI meeting (Oct. 2006). It will be hosted at ISSI.

The folder Articles of our ftp site contains the articles that will populate the database.

## 3 Survey articles

The web portal will also offer a series of surveys on 3D reconstruction. These are meant to be user-oriented surveys in an approach similar to the Numerical Recipes book, referring as much as possible to existing material.

### 3.1 Contents

There will be three main chapters, with the contents and assignments given below. Some items, which have already been covered in detail in the literature, will just have a short description with links to existing material. As a general guideline, we start from the techniques we know about and then proceed with the science that can be addressed by each.

section	topic	authors
introduction	roadmap	team
introduction	primer on stereoscopy	Bernd
loops	introduction : physics of loops (< 1 page)	Bernd
loops	epipolar geometry as a constraint	Bernd
loops	object-oriented loop disentangling	tbd later
loops	loop identification and extraction	Jean-François, Bernd, Thierry
loops	optical flow for stereoscopy + epipolar constraints	Jean-François
loops	standard correlation and local correlation approach + epipolar	Thierry, Jean-François
loops	tie-point : tie-point tool	Bernd
loops	tie-point : analysis + reconstruction errors	Bernd
loops	tie-point : tomography tools for stereoscopy	Bernd
loops	magnetic field extrapolation as a constraint	Bernd
loops	forward modelling	tbd later
plumes	introduction : physics of plumes (< 1 page)	Antoine
plumes	enhancement of plumes : image processing	Jean-François, Antoine, Thierry
plumes	sinograms	Antoine
plumes	tomography : 2 or more viewpoints, multi-spectral	Frédéric, Antoine
plumes	forward modelling	Frédéric, Antoine
other structures	coronal hole boundaries	Frédéric
other structures	prominences	Karine Bocchialini
other structures	streamers	Antoine, Angelos
other structures	CMEs	Angelos

Some items were left out until further decision. They deal with preprocessing aspects such as :

- impact on compression on stereoscopic image reconstruction
- removal of cosmic ray hits
- impact of instrument calibration differences
- denoising in general
- required signal/noise level for performing stereoscopic reconstructions
- impact of noise statistics, etc.

### 3.2 Agenda

**July 3** : each team member uploads his first drafts in his folder, in ISSI's ftp site. Thierry will compile a single document, which will be distributed to all for cross-checking.

**mid August** : teleconference to decide on main modifications/additions to make. *It is essential to read all the chapters beforehand.* A second version will then be prepared.

**October 9** : upload second version on the ftp site.

**October 23 (tbc)** : SECCHI meeting : make the web site and the survey articles available to the community.

**January** : last team meeting : finalise the survey articles.

### 3.3 Editorial points

The ISSI LaTeX template will be used, including hyperreferences. The LaTeX files and an example file are available on the ftp site, in the `Survey/Template` folder.

**Naming conventions** for labels :

- `ch:xxx:yourlabel` for a label referring to a given chapter or section
- `eq:xxx:yourlabel` for a label referring to an equation
- `fg:xxx:yourlabel` for a label referring to a figure

where `xxx` stands for one of the four chapters : `intro`, `loops`, `plumes`, `others`.

**Figures** : All texts will be stored in a single folder. Figures, however, will be stored in separate subfolders whose names correspond to the 4 chapters. Each figure name should start with the initials of the author. For example, figure `myplume.eps` by Frédéric on `plumes` will be stored in `./Auchere/Plumes/FAmyplume.eps` :

<code>./Auchere</code>	contains all .tex files and single .bib file
<code>./Auchere/Intro</code>	contains figs for 1st chapter
<code>./Auchere/Loops</code>	contains figs for 2nd chapter
<code>./Auchere/Plumes</code>	contains figs for 3rd chapter
<code>./Auchere/Others</code>	contains figs for 4th chapter
<code>./Auchere/Wiki</code>	contains material for Wiki database

**References** : each author will provide his own BiBTeX file, to avoid conflicts. These BiBTeX files will start with the initials of the author, e.g. `FAmybibfile.bib`. These files will be merged in the final document. The labelling of the references is free of choice, e.g. `Schwenn99` or using the NASA ADS naming convention.

## 4 Website

Our website is at : <http://www.issi.unibe.ch/teams/Stereo/>

sftp access : <sftp://Stereo@ftp.issi.unibe.ch/> (no more ftp)