# Nobeyama Radiospectrographs (NoRS) Analysis Manual ver. 0.0

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## 1 Introduction

This is a manual for analysis of the data obtained by Nobeyama Radiospectrographs (NoRS; stop operation in Aug 1994; Kai et al. 1980).

For any questions and requests, please send an e-mail to

`nsro-service@solar.nro.nao.ac.jp`

The latest information on NoRS is updated on NSRO Web site. The URL is

`http://solar.nro.nao.ac.jp/nors/`

## 2 How to setup

(1) Installation of the *SolarSoftware*.

Install the SolarSoftware (SSW). If this was not installed, please contact your system manager. The primary distribution site for SolarSoftware is: `http://www.lmsal.com/solarsoft/`

(2) Setup of your personal environment

Include the followings in your environment setup file (`~/.cshrc`). `setenv SSW` *SSW-directory*[1]

```
setenv SSW_INSTR ``nors''
setenv NORS ${SSW}/radio/nors
source ${SSW}/gen/setup/setup.ssw
source ${NORS}/setup/setup.nors
```

Note that the enviroment variable `${SSW}` can be different (Ask your system manager)[2]. In case you analyze many kinds of data at the same time, define SSW_INSTR as follows, e.g.

```
setenv SSW_INSTR ``nors sxt norh''
```

## 3 Where is the Data ?

### 3.1 Raw Data

Some raw NoRS data are put in the NSRO archive. You can obtain them by anonymous FTP.

[1] `/sgi1/ssw` in NSRO

[2] In NSRO, it is `/sgi1/ssw`

# 4 Analysis

## 4.1 Start Analysis

The NoRS IDL procedures described in this section all depend on the SolarSoftware (SSW). When you start the analysis, start up the SSW/IDL as follows:
`unix%` **sswidl <CR>**

# 5 Read the Data

In order to read the data into IDL session, give the file name as follows:
`IDL>` **file='./ds940220'**
`IDL>` **nors_rd_dat,file,time,mvd,freq,datalo,datahi,mvdd2,freqd2,datad2 <CR>**
In order to read the data in specified duration:
`IDL>` **timerange=['1994-2-20 2:00','1994-2-20 4:00'] <CR>**
`IDL>` **nors_rd_dat,file,time,mvd,freq,datalo,datahi ,mvdd2,freqd2,datad2,timerange=timerange <CR>**

# 6 Plot

For plotting,
`IDL>` **nors_plot,time,mvd,freq,bytscl(dataloi) <CR>**
For plotting in specified duration
`IDL>` **nors_plot,time,mvd,freq,bytscl(dataloi),timerange=timerange <CR>**

# A NoRS data archive: anonymous FTP

The Nobeyama Solar Radio Observatory (NSRO/NAOJ) has prepared the anonymous FTP server for the NoRS data archive. The URL is

`ftp://nsro-archive.nro.nao.ac.jp/pub/nors`

If you need to transfer a large amount of data , please contact

`nsro-service@solar.nro.nao.ac.jp`
We will make and mail a CD-ROM for you. The network capability in Nobeyama is limited.

# B Acknowledgement

We thank the following people. SolarSoftware is a software package for analysis of Solar Data on IDL. That is supported under various NASA contracts (SXT/EIT/MDI/TRACE/YPOP etc.) and is all in the public domain. IDL is a product by Research System Inc.

# References

Kai et al., "Nobeyama Radiospectrographs for Solar Observations", 1980, PASJ, 32, 371