Bergen/Jan Brøgger/2016-11-16

How to get started with the ScorePipeline project

# Requirements

* SQL Server instance available for restoring and mounting the ScoreAnon database.
* A Score anonymized database backup available for research (an example is included).

# Overview

* Install matlab 2016.
* Unzip the SQL Server database backup “ScoreAnon” and copy it to the SQL Server Backup location
* Restore the SQL server database “ScoreAnon” or other SCORE database used for research
* Run some SQL scripts that create additional tables.
* Clone the two git repositories EEGLAB and fieldtrip
* Change the config options (paths to EEGLAB etc).
* Start matlab
* On the Matlab command line, enter:

Cd [path-to-ScorePipeline\matlab]

ScorePipeline

* Open a research project, and setup your annotations as detailed below

# Install Matlab 2016

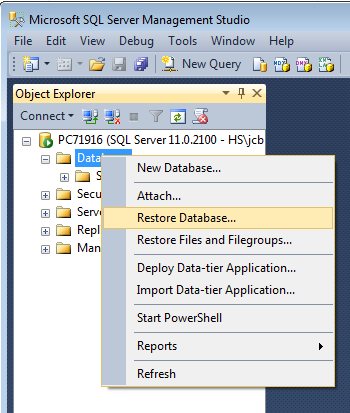
# Unzip and restore backup

Unzip the file “HolbergAnon\_20160620.7z” using the program 7-zip.

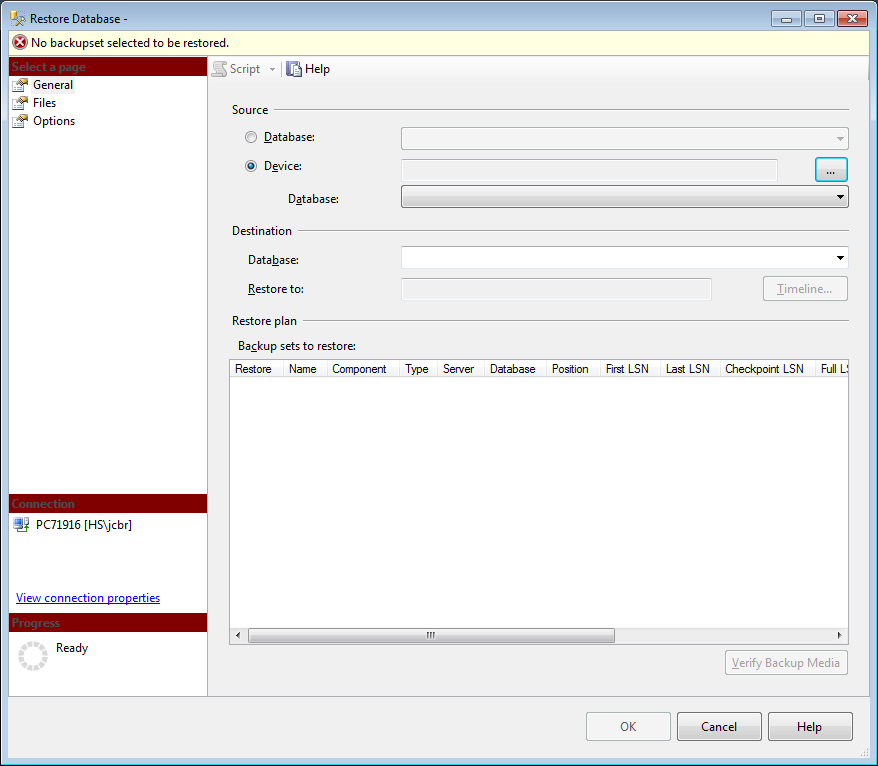
Copy the backup file to the SQL Server instance’s backup directory, typically “%ProgramFiles%\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\Backup” or similar.

Start SQL Server Management studio.

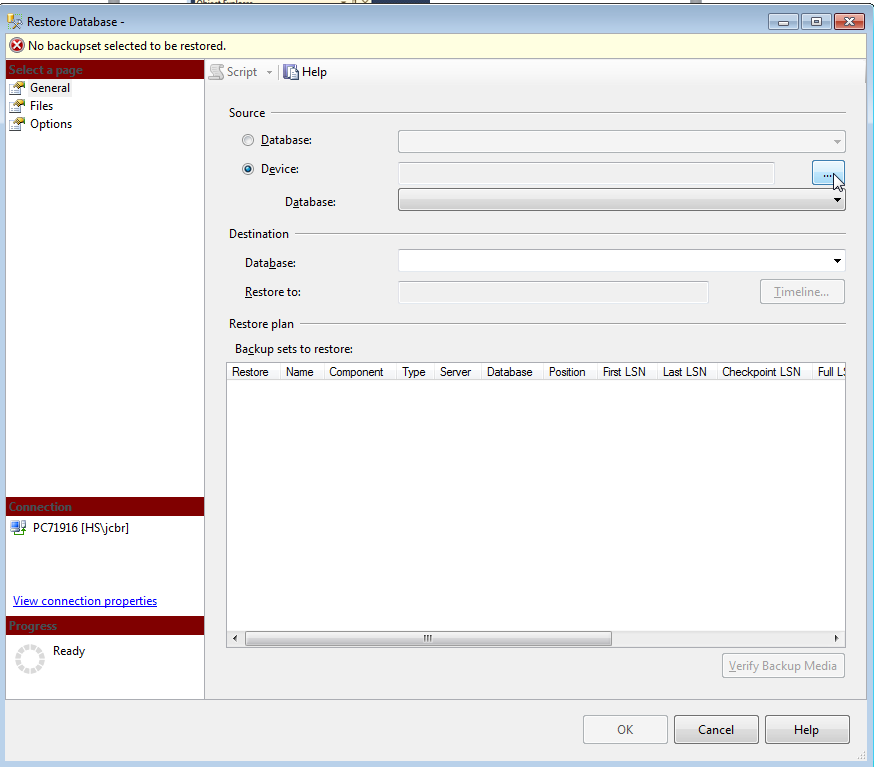
Right-click databases and choose “Restore”:



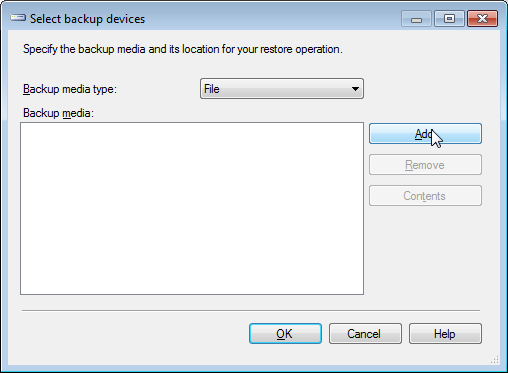
You will see this screen:



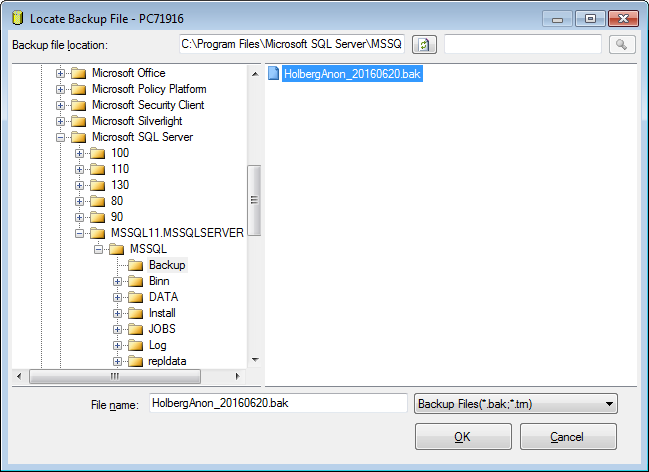
Click “Device” and “…”



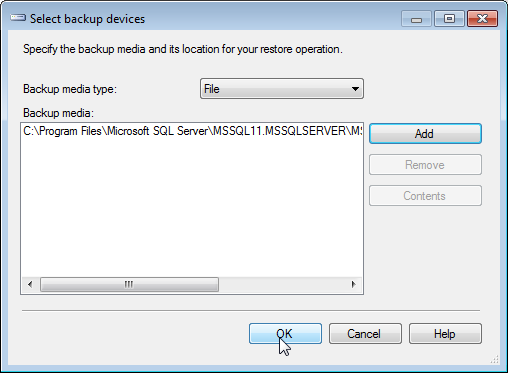
Click “Add”



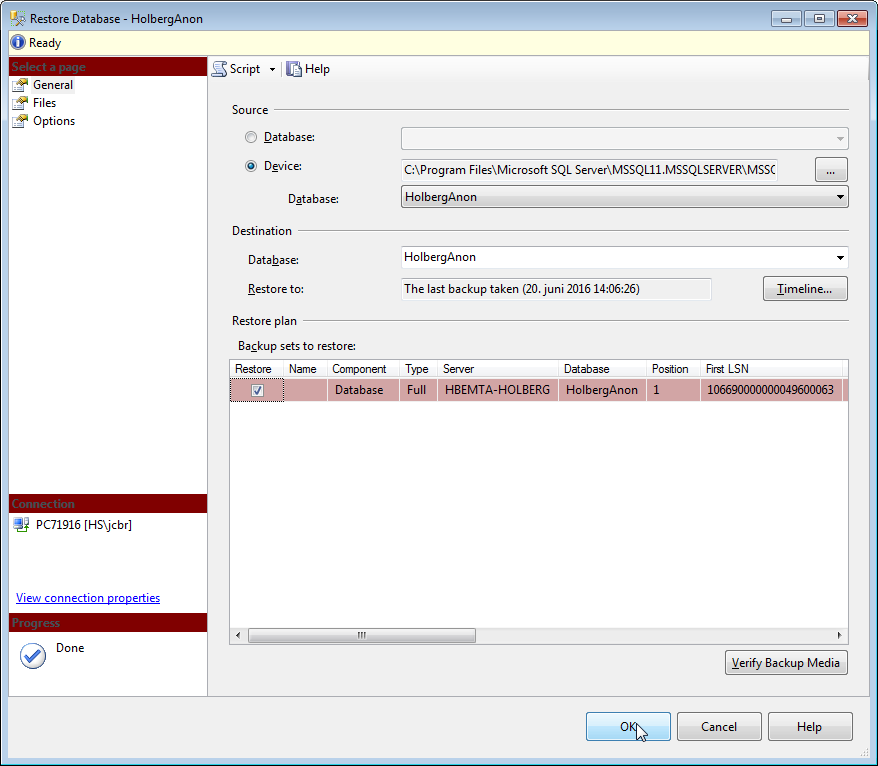
Click the SCORE backup:



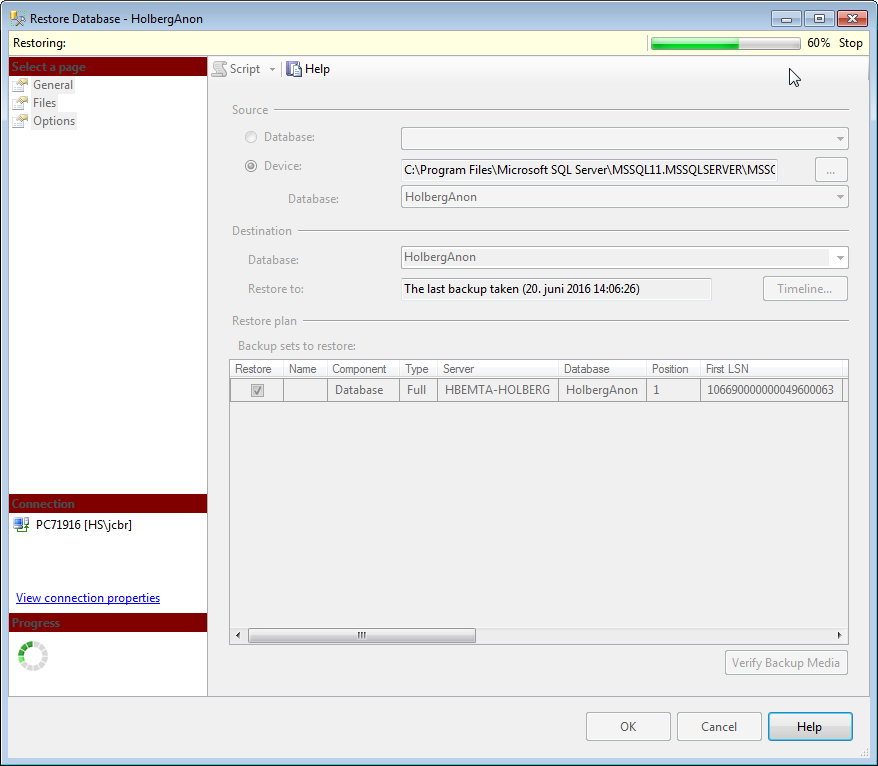
In this screen, click OK:



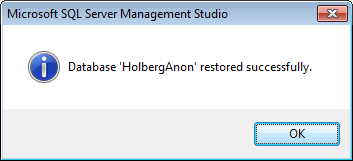
In this screen, click OK:



The restore process will start:

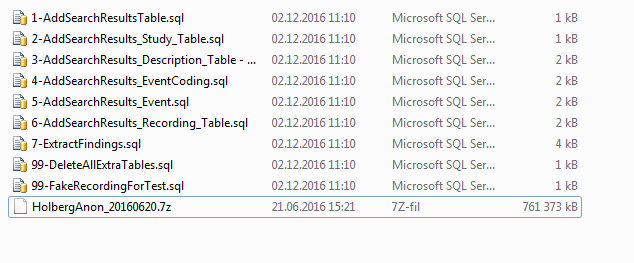


And when it is finished, you will see this:



# Run SQL table creation scripts

In the ScorePipeline repository, in the ScoreDb directory, you will find the following files:



Run the scripts with file names that start with 1-7. These will create some extra tables that are used in the research pipeline.

# Setup JDBC connection

Open these instructions for reference: <https://se.mathworks.com/help/database/ug/microsoft-sql-server-jdbc-windows.html>

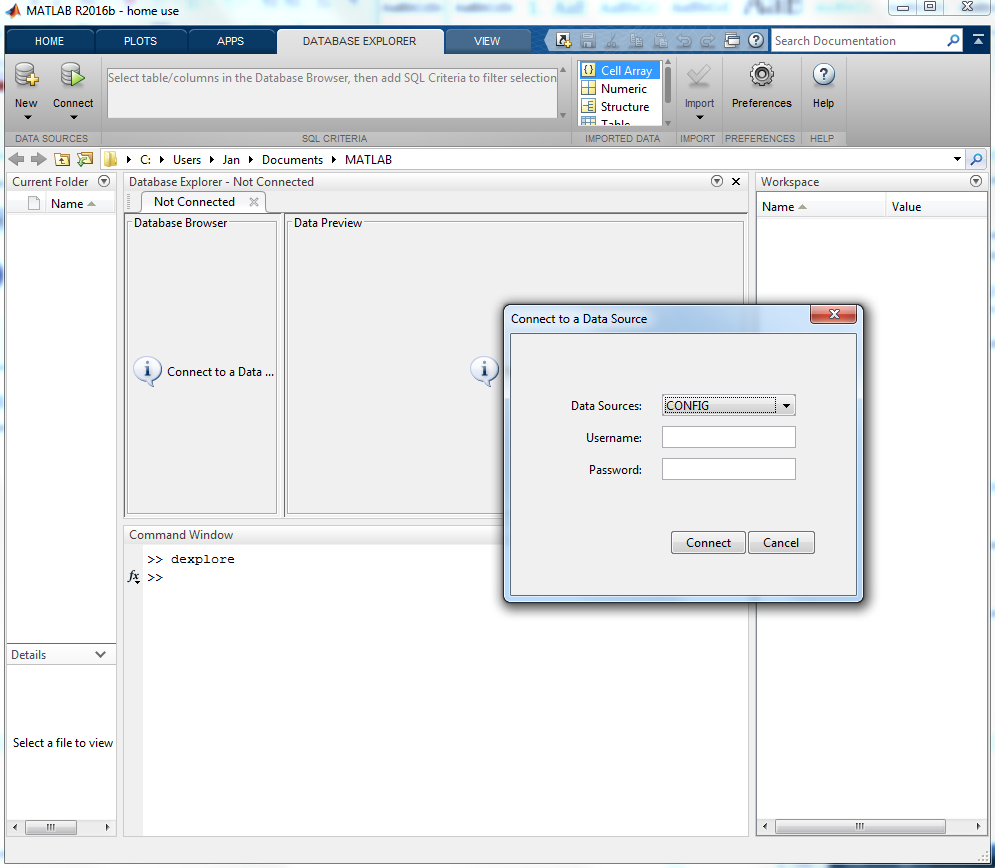
The ScorePipeline repository ships with a copy of sqljdbc4.jar and sqljdbc4.jar that you should be able to use as long as you are on a 64-bit Windows.

In Matlab, run the ScoreAssistJDBC() function to assist in the setting up of the JDBC. This will handle the Java class path and library class path for JDBC. Restart Matlab.

## Verify your JDBC setup

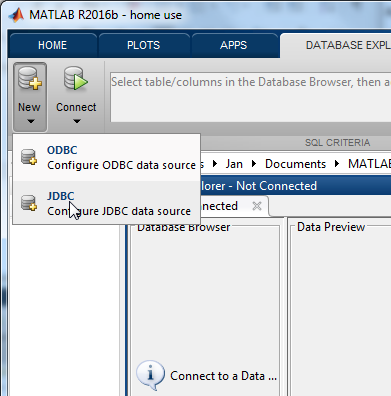
To verify the connection, use the database toolbox explorer like so:

>>dexplore

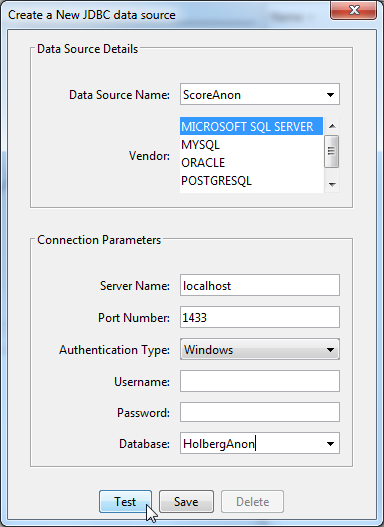


Click cancel

Then click New/JDBC data source



Then in the parameters window, enter this:



And click Test.

After a successful test, close the window without saving.

# Setup Git repo dependencies

This repository depends on two other repositories:

1. A fork of EEGLAB, at https://bitbucket.org/janbrogger2/eeglab

2. A fork of FieldTrip at https://github.com/janbrogger/fieldtrip

How to clone the repos to use with ScorePipeline:

cd /d %USERPROFILE%\Documents\

mkdir GitHub

cd %USERPROFILE%\Documents\GitHub

git clone https://janbrogger2@bitbucket.org/janbrogger2/eeglab.git eeglab

git clone https://github.com/janbrogger/fieldtrip fieldtrip

# Change the config options

Edit ScorePipeline\matlab\ScoreConfig.m

You can change the following:

* The database server and database name
* The SCORE pipeline base path
* The EEGLAB path
* Verbose debug logging or not
* Any local Nicolet event type GUIDs, for example:

eventGuids = {

'EE867C9B-F822-4B1E-AF3E-0B179DD6E0C0' 'Smertestimulerer';

'ED986976-8E07-4C44-84CD-7624EB3323FB' 'Graphoelement';

'C5C3A3BC-9683-43D6-A703-A74859CEA2A9' 'Event\_EEG';

'BBD1DA4C-62F4-4EE1-8F28-B5E83B82C575' 'Snakker til pas.';

'B0A2B82D-C98F-4699-AF6A-BDE9CF4645A1' 'Øyne lukket';

'A5A95601-A7F8-11CF-831A-0800091B5BDA' 'Øyne åpne';

'A2A9E9A4-7EED-466B-B7F6-BB48F3140260' 'Event';

'93A2CB2C-F420-4672-AA62-18989F768519' 'Detections Inactive';

'8DA27322-155A-4A0C-A2D2-6DC03114BAA3' 'Klapper';

'71EECE80-EBC4-41c7-BF26-E56911426FB4' 'Recording Paused';

'32F2469E-6792-4CAD-8E11-B7747688BB8B' 'Unknown - SCORE?';

'056F522F-DDA5-48B9-82E1-1A75C35CBC30' 'Unknown 2 - SCORE?';

'01E4E4E6-EA8E-4c08-800C-B841D3C391C1' 'Video Review Progress';

'F7744DB4-2EF5-4D31-8259-CBDFA8CDDF73' 'Rykning';

'ACECF7F5-27C1-4A5D-9EA4-3E8E5B7A1ECD' 'Øyne Åpne';

'CA3FFF17-0814-4060-8B8A-7511A4CD885D' 'Blunker';

'5ACBF52B-C130-41AD-B615-266E7CC4A784' 'Øyne Lukket';

'A5A95645-A7F8-11CF-831A-0800091B5BDA' 'Annotation D';

'65BB4425-FF4C-43D3-9FBF-2C022B76C100' 'Hoster';

'71EECE80-EBC4-41c7-BF26-E56911426FB4' 'Recording Paused';

'799B142D-6AA8-4BF3-9E6D-9BBE3B859419' 'Anmrk Kort'

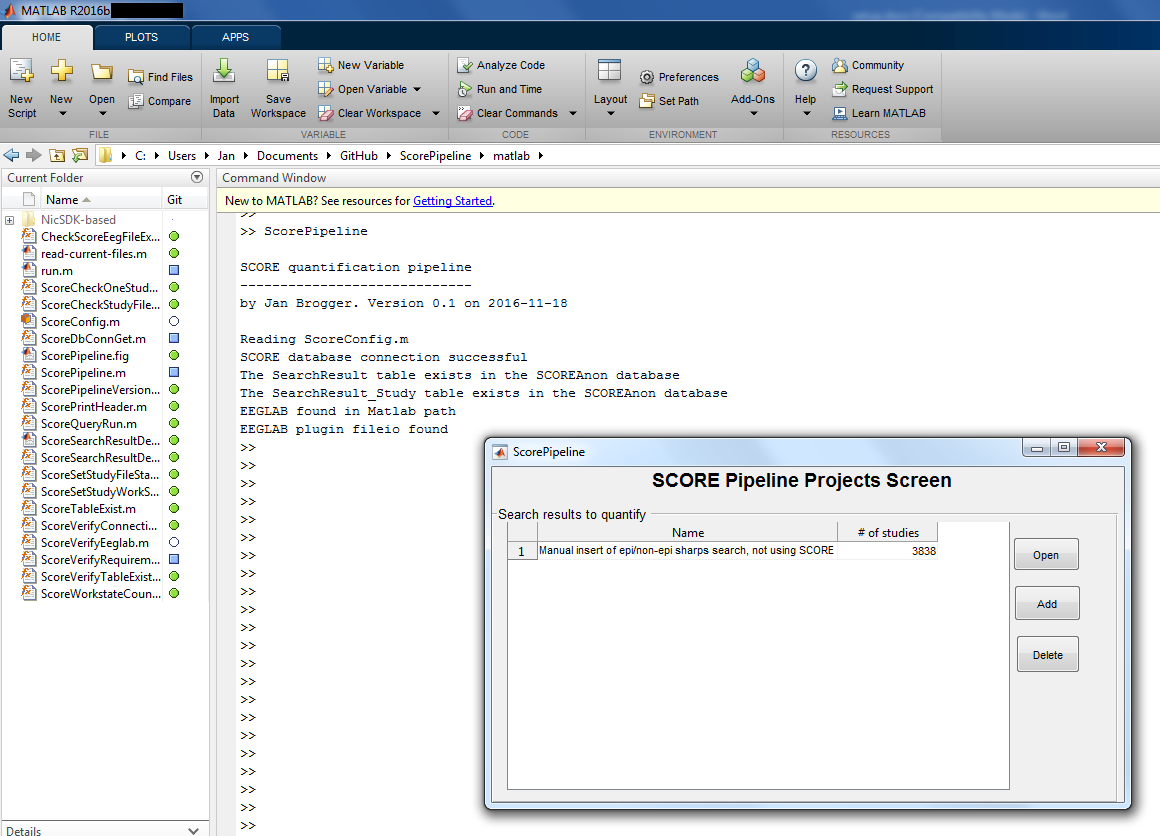
'1E8ABB48-B049-4147-83CC-8FE04E813530' 'Bevegelse'

}

# Startup

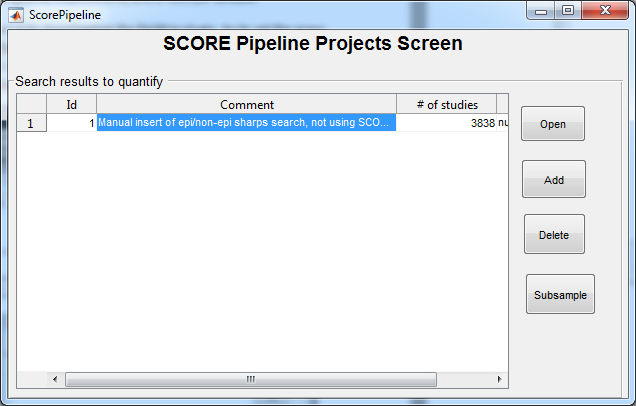
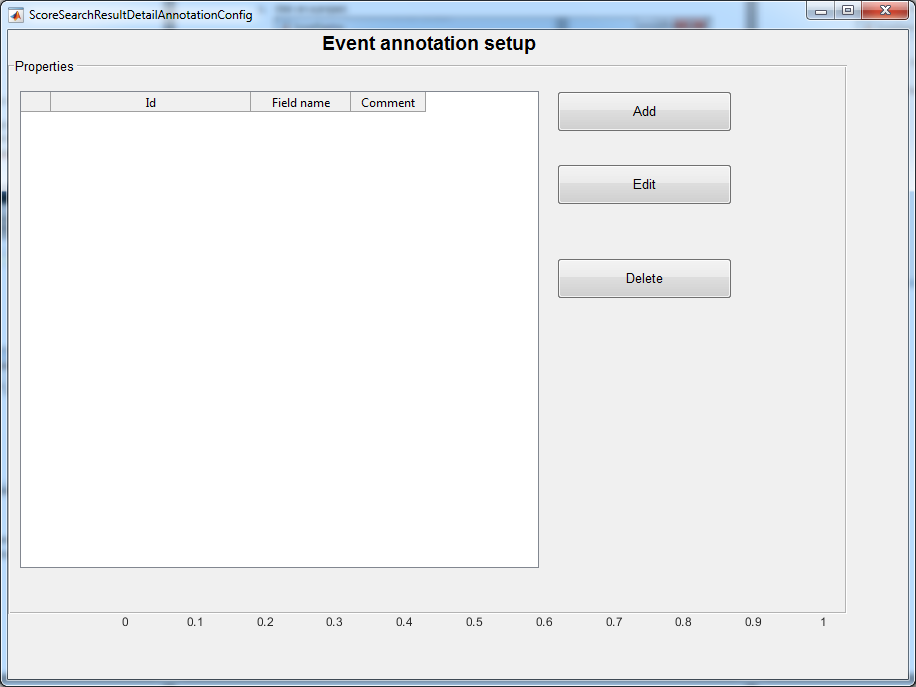
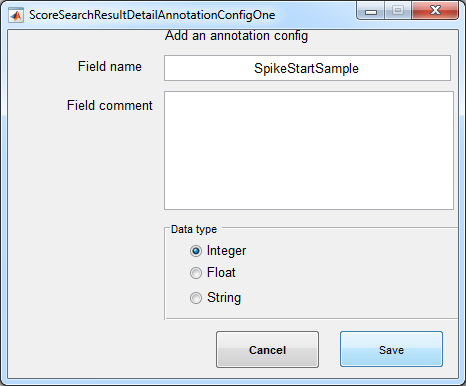
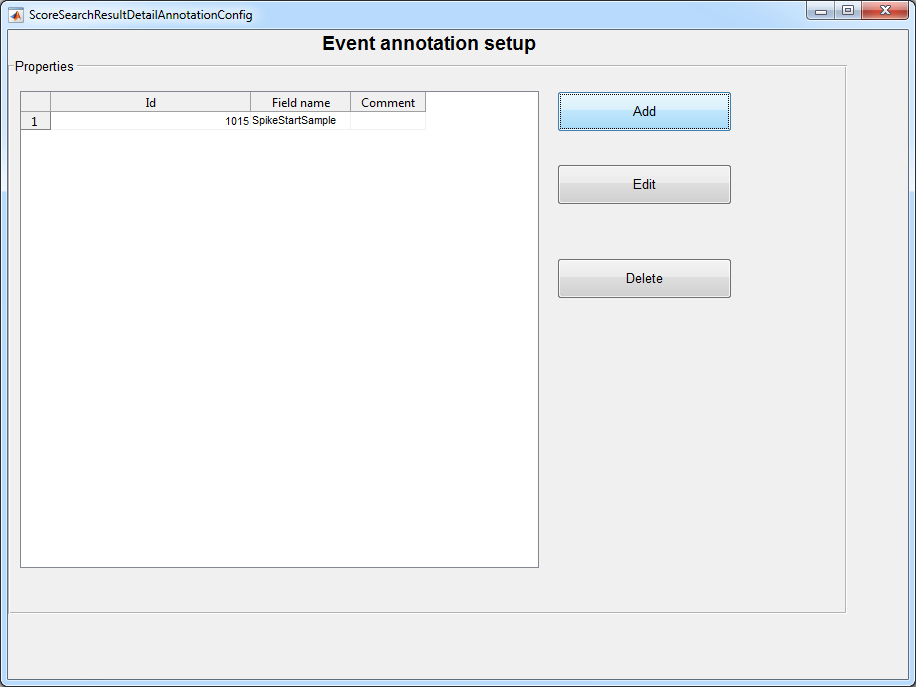
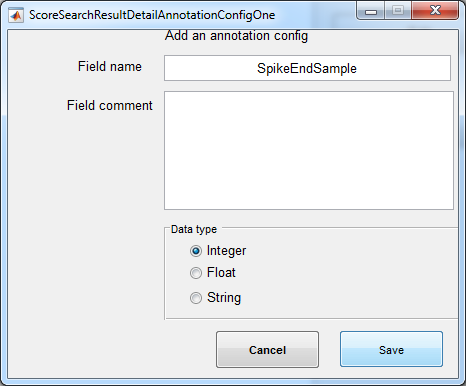
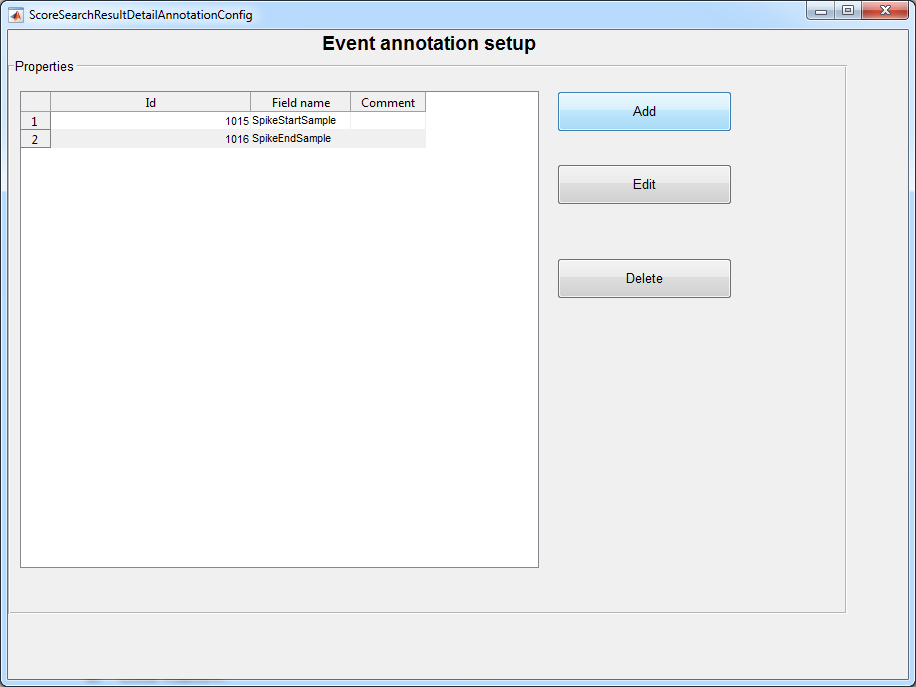
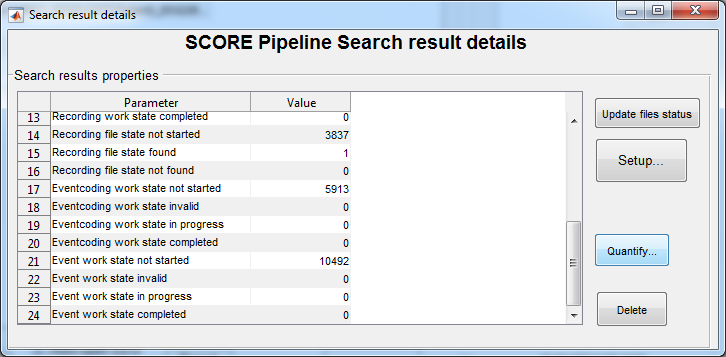
1. Start Matlab.
2. Add the ScorePipeline directory to the path, e.g.
   1. addpath J:\ScorePipeline\matlab
3. Optional: type command “savepath” to save the new path permanently
4. Type “ScorePipeline”
5. You will see some text output, checking some requirements, and a new GUI window.

Troubleshooting : if you get an error when auto-downloading the fieldtrip plugin, try to set the proxy information manually and re-try “ScorePipeline”. If that doesn’t work, then edit the batch file “update-fieldtrip-in-eeglab.bat” with the correct paths to the fieldtrip and eeglab repositories. Then run the batch file, and re-run ScorePipeline.



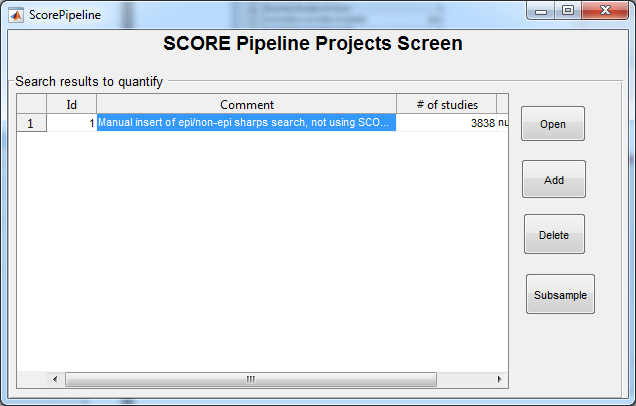
# Setup annotations

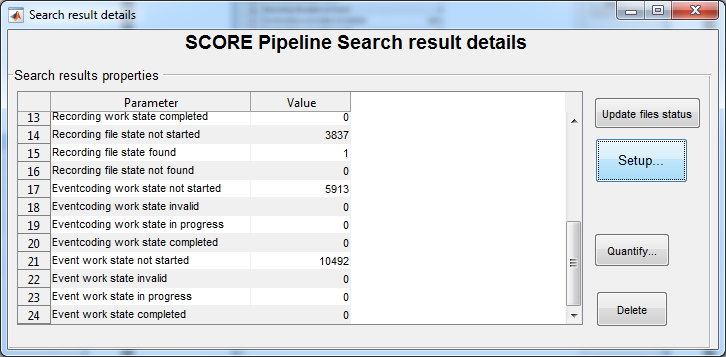
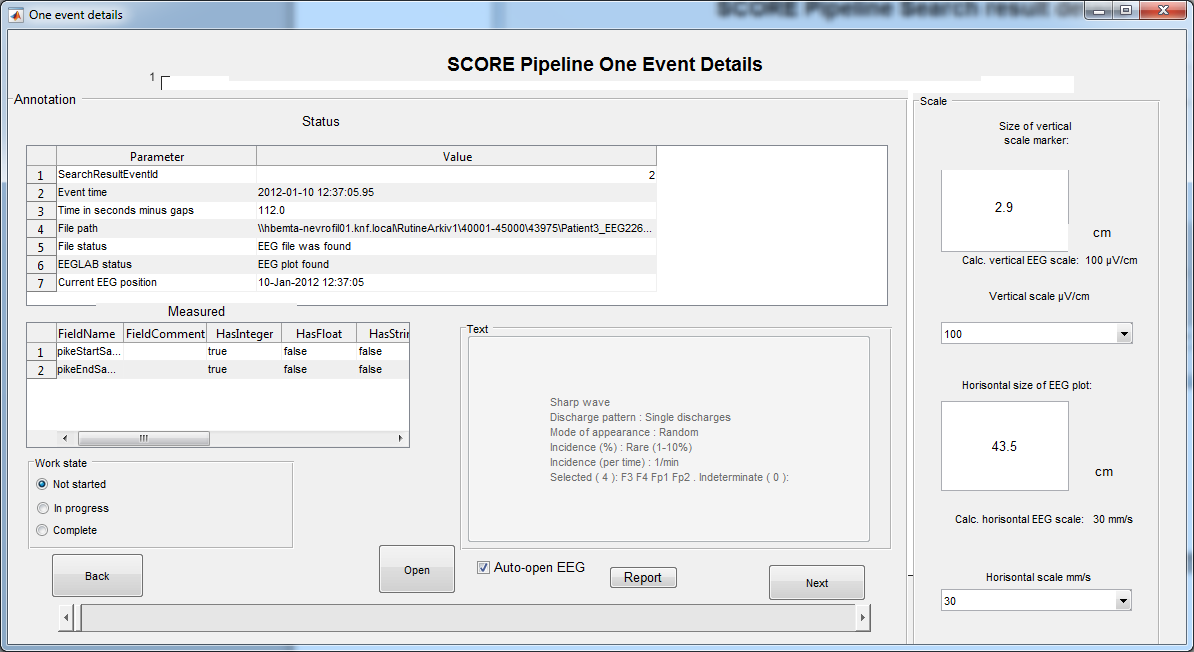
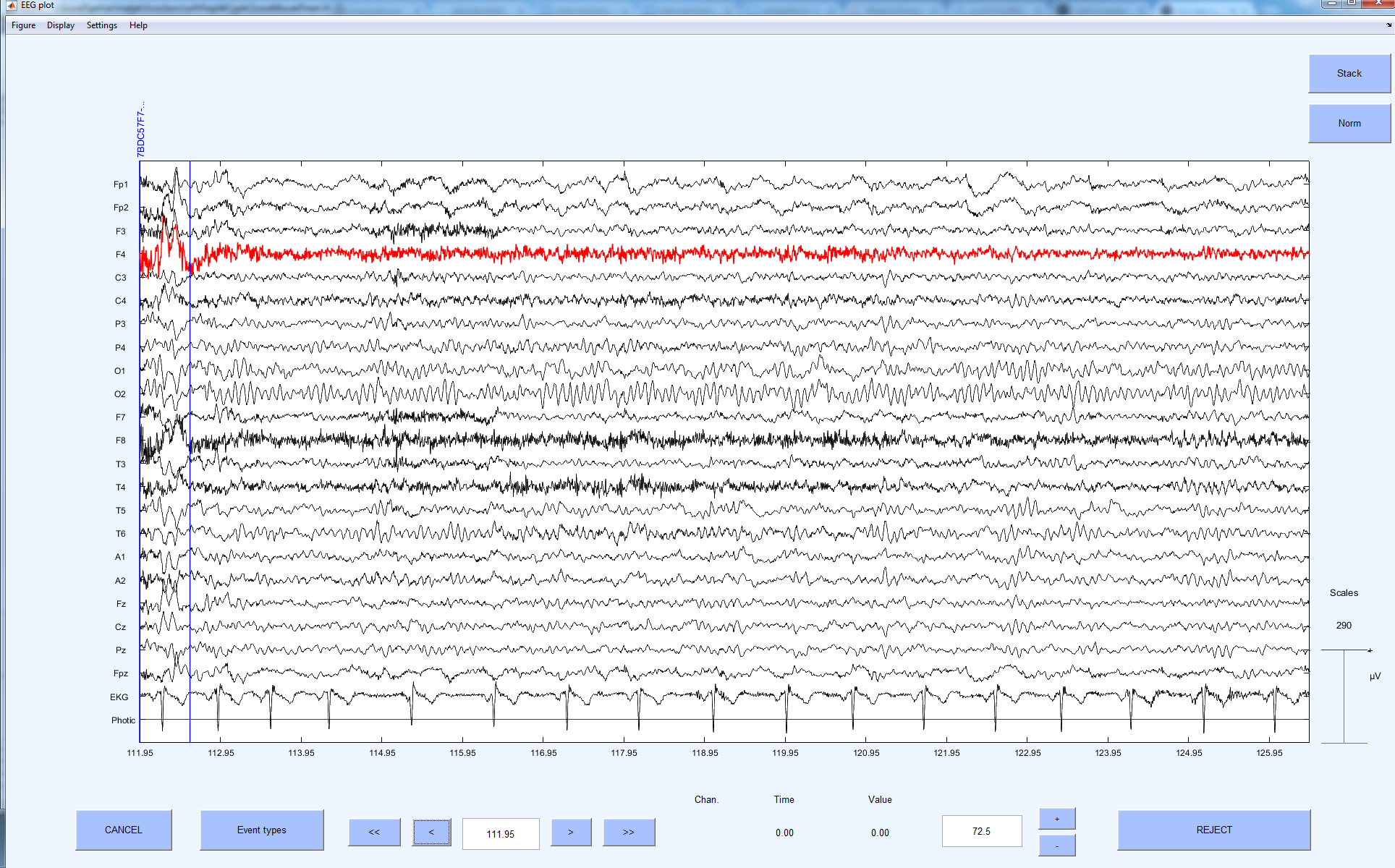
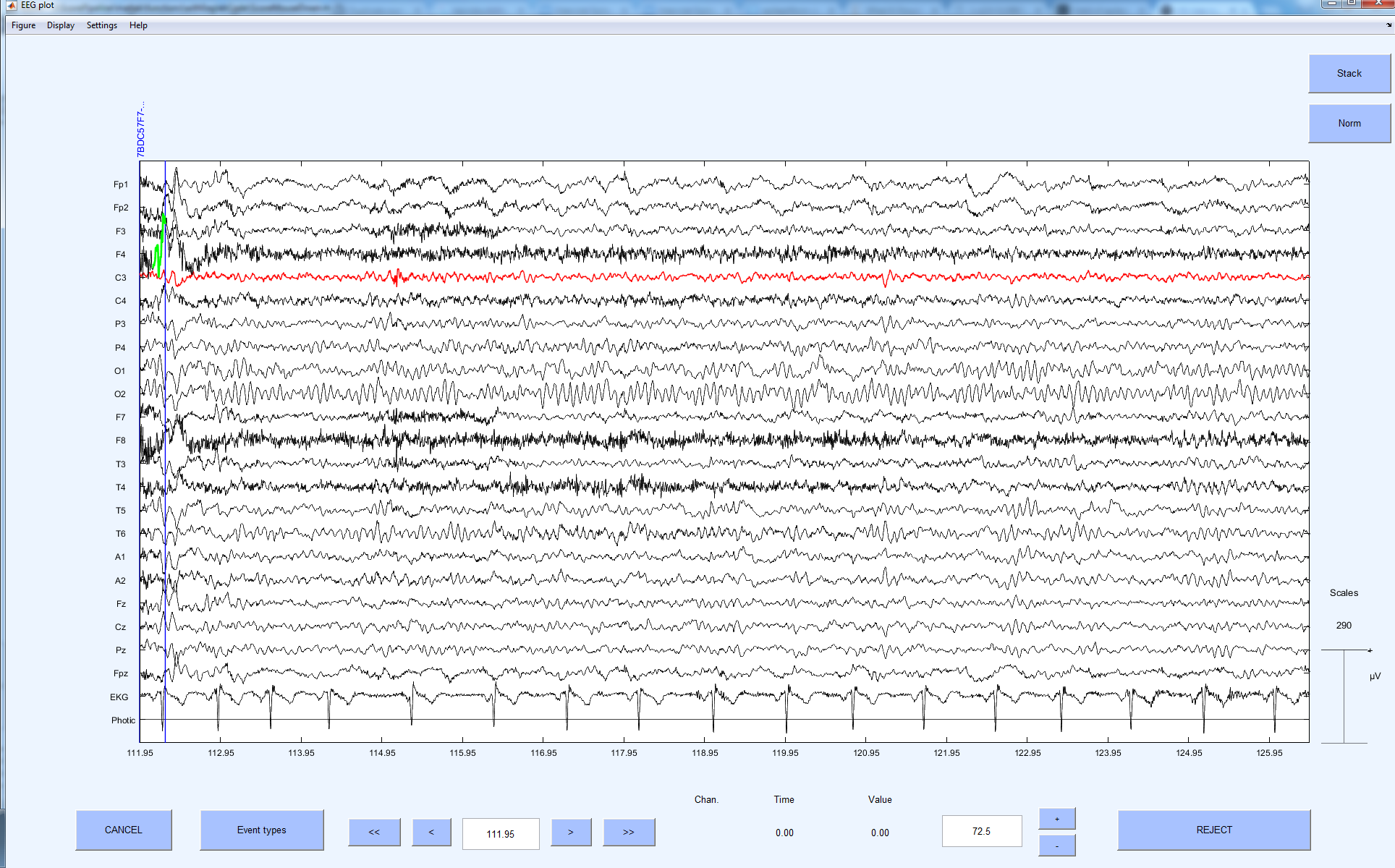
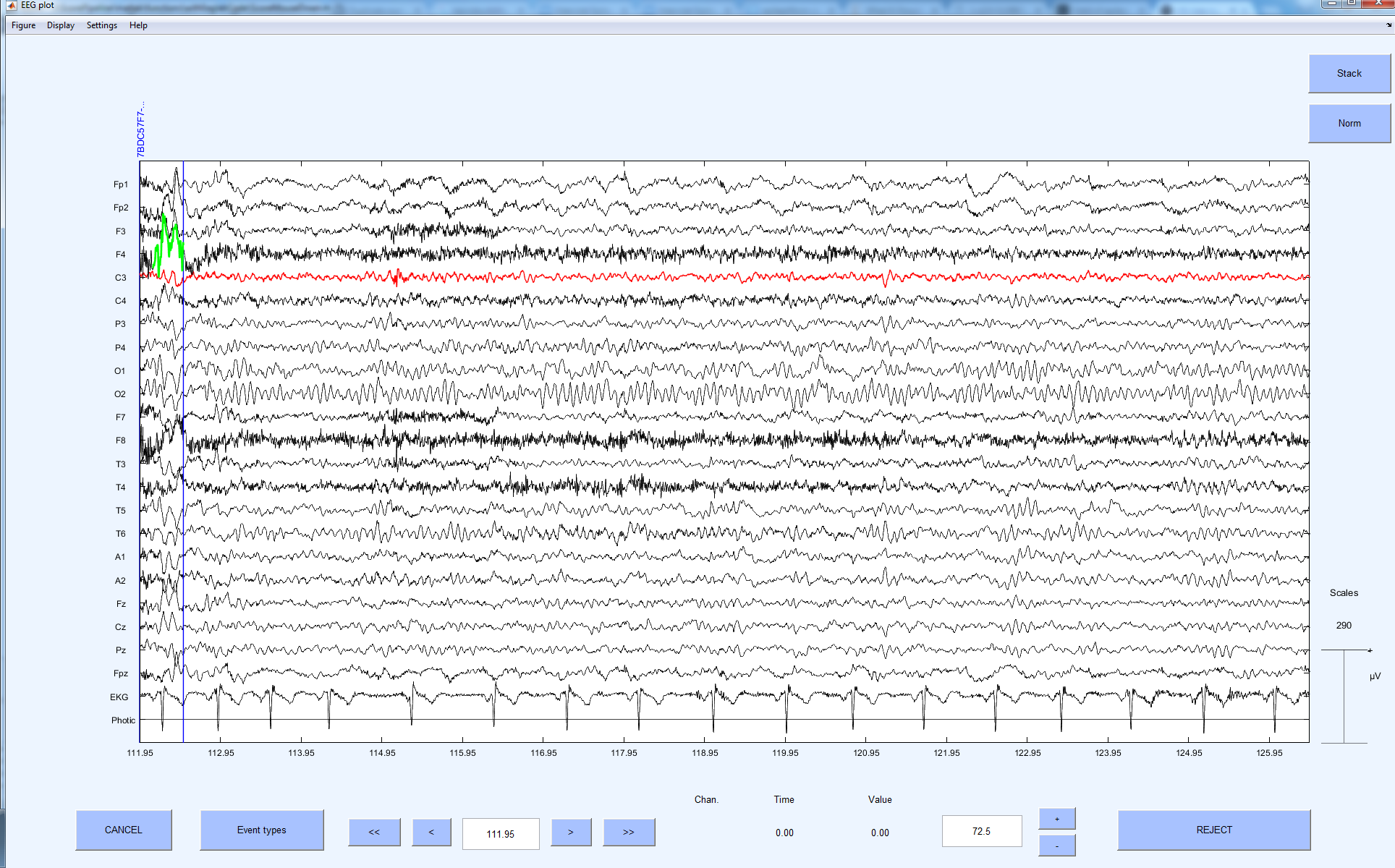
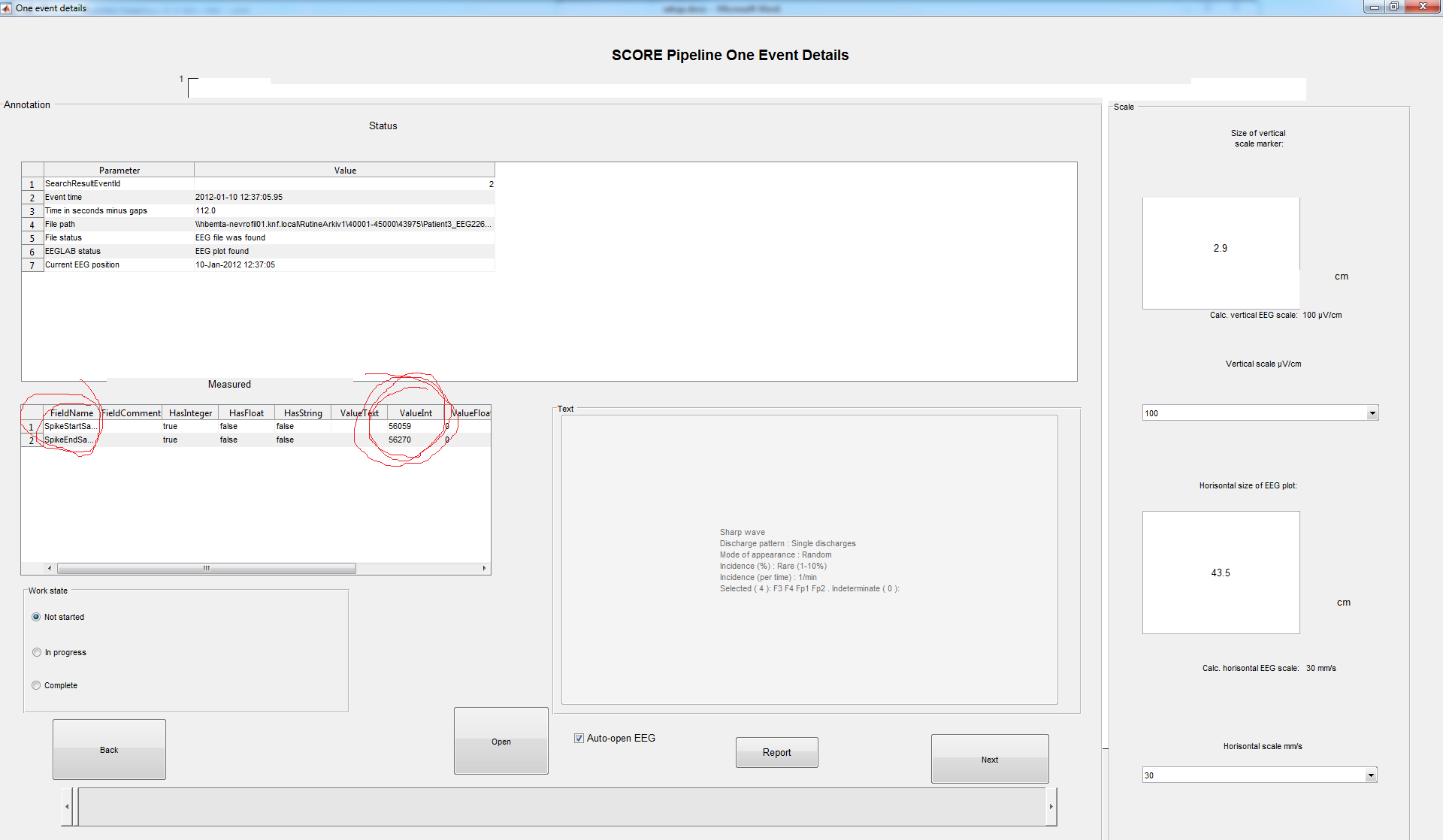
You now need to set up annotations. Currently, if you have defined annotations named “SpikeStartSample” and “SpikeSampleEnd” then a mouse click sequence in the EEG plot will store the selected spike sample start and end. Do the following:

1. Click on a project. 
2. Click “Open”
3. Click “Setup”. You will see something similar to this: 
4. Click “Add”. Enter a field name. You will see something similar to this:
5. Click Save. The screen will look like this: 
6. Click “Add” again.
7. Enter a field name again (e.g. “SpikeEndSample”) 
8. Click «Save». The screen will look like this: 
9. Click the upper right «X» to close this dialog.
10. You will now see the details for the research project again: 

# A simplistic description of how to quantify

1. Start “ScorePipeline” from the command line



1. Select a project. Click “Open” like so: 
2. Click “Quantify”
3. Click “Open”
4. Wait for EEGLAB to open the EEG.
5. Go to the EEGLAB plot window. Note that when you hover with the mouse over the plot, parts of the EEG data will be in red (the current channel) 
6. Mouse click down on the start of the segment that you want to select.
7. Then move the mouse down to the stop of the segment that you wish to select. 
8. The selected segment of EEG will be shown in green as you move the mouse.
9. Click mouse down as you mark the end of the EEG segment. 
10. On the “SCORE One Event Details” screen, the annotations panel will update with the new mouse-clicked data (marked in red below: 
11. When you are finished with this event, you can set the work state for this event to indicate that it is finished: 