This document is created to help creating your Mplot.
The folder contains the following functions all written in MATLAB:

- **runsplat.m**
  This is the main script you may wish to use running SPLAT and create the Mplot.

  ```
  >> runsplat
  ```

  Before running don't forget to set the following parameters in this script:

  1. **subsequence_length**
     Set to our desired subsequence length. (Type: integer)
  2. **timeseriesA**
     Set to your input time series. Currently the variable is set to a toy set, named "test_sine".
  3. **timeseriesB (Optional)**
     Set to your second input time series, if running an AB-join. Otherwise, leave it as "nan".
  4. **multiresolution (Optional)**
     Whether you'd like to compute an approximate Mplot for large scale time series in less that 2 seconds (set to 1) or like to compute the full exact matrix (set to 0). (Type: Boolean)
  5. **Calibration (Optional)**
     A quick calibration which finds the longest time series length that can be computed in less than 2 seconds. Then for any input greater than that length the approximate Mplot will be computed. (Type: Boolean)
  6. **display_mplot (Optional)**
     To plot the Mplot at the end or not. (Type: Boolean)
  7. **piecewise (Optional)**
     The user may wish to compute the exact patchwise Mplot instead of a full approximation of it. In that case you he/she can set the "piecewise" parameter to 1 and the piecewiseSPLAT will run automatically.
  8. **patch_size (Required if piecewiseSPLAT)**
     The user can choose the size of patches to compute. It is currently set to 5000.

- **SPLAT.m**
  Takes in the time series and the subsequence length and compute the similarity matrix. The Mplot can be displayed at the end by setting the **display_mplot** parameter to 1.

  ```
  >> [splat]    =    SPLAT(timeseriesA,   subsequence_length,   timeseriesB,
  display_mplot, multiresolution, calibration);
  ```

- **piecewiseSplat.m**
  Runs the exact SPLAT patch by patch and returns the last patch. The user can choose which patch to return (As shown in Rescaled Mplot section VI.*C*) and may view each patch as soon as it's computed.
  Currently the piecewise code is set to run SPLAT whenever the original time series length can be computed in less than 2 seconds.

  Recommended patch_size : 5000

```
>> [lastpatch] = piecewiseSplat(timeseriesA, subsequence_length, patch_size,
display_mplot, timeseriesB);
```

- **SimMat.m**
  This script is the same as SPLAT when multiresolution is set to 0. In other words, it always computes the exact similarity matrix. It is also used as a helper function inside **getPaaFactor.m.**

  ```
  >> [similarityMatrix] = SimMat(timeseriesA, subsequence_length, timeseriesB)
  ```

- **paa.m**
  A helper function used inside SPLAT.m to downsample the time series data when the input time series length is greater than a threshold.

- **getPaaFactor.m**
  A helper function used in SPLAT.m to find the best downsampling factor when calibration is set to 1