

Figure 1. Test to evaluate the essential tremor performed on a sheet of paper.

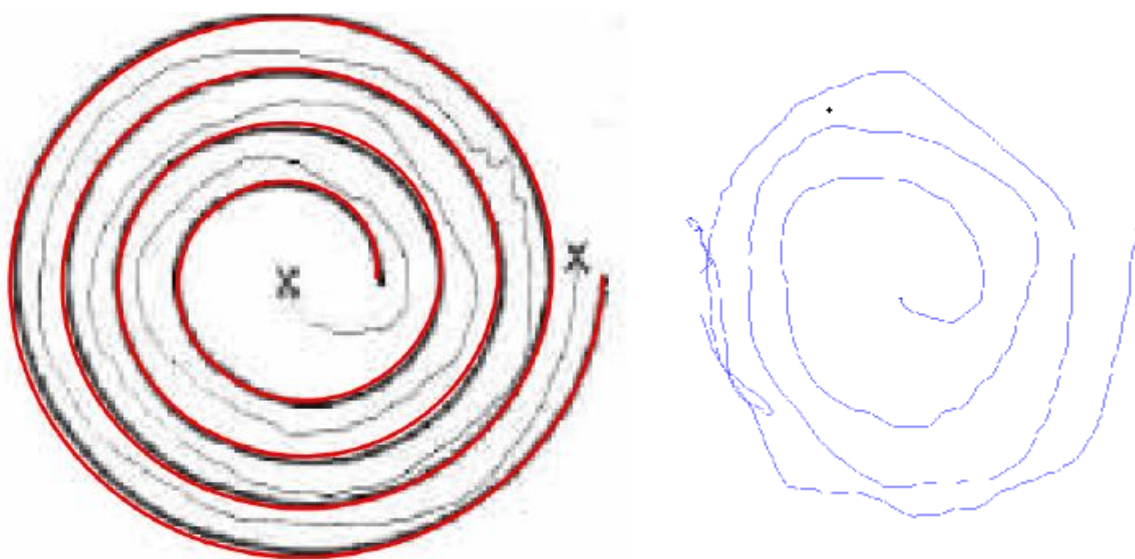


Figure 2. (Left) Reference (red line) and actual data. (Right) Example of another actual data.

Red line: Spiral (mathematical spiral, “correct”)

Handwritten: spiral drawn by a patient.

Goal: Objectively evaluate the multi-purpose dynamic discrepancies between ideal data (red line) and the black handwritten line from a *line* starting from outer X to inside X.

Some remarks:

Data (handwritten) are acquired by means of a Tablet. Therefore, the following variables are available:

- x,y data (the handwritten line)
- Pressure exerted by the hand ($p(x,y)$)
- Time to draw the line ($t(X_{\text{outer}}) \rightarrow t(X_{\text{inside}})$)

From the set of data, some statistical measures are obtained.

In the attached file there are actual data for a test. Find below an extract of one of the actual data:

```
1447
1650 9960 1350567237087 1 0 900 1229
1660 9970 1350567237102 0 0 900 0
1670 9990 1350567237120 0 0 900 0
1670 9980 1350567237153 0 0 900 0
1670 9960 1350567237157 0 0 900 0
1660 9940 1350567237166 0 0 900 0
1650 9920 1350567237173 0 0 900 0
1650 9890 1350567237181 0 0 900 0
1640 9850 1350567237189 0 0 900 0
1630 9820 1350567237197 0 0 900 0
1630 9770 1350567237205 0 0 900 0
1630 9730 1350567237213 0 0 900 0
1630 9680 1350567237221 0 0 900 0
1630 9630 1350567237225 0 0 900 0
1670 9200 1350567237269 0 0 900 0
1670 9190 1350567237284 0 0 900 0
```

Some remarks:

- For each patient, the volume of data may be large and must be well-organized,
- Data are dynamic (the collected data grows with every control session).
- The processing of the data is under discussion (we have to decide exactly what is relevant for our purposes), but, it is expected that the related computational cost is not going to be large, although, some “heavy” plots may be generated.