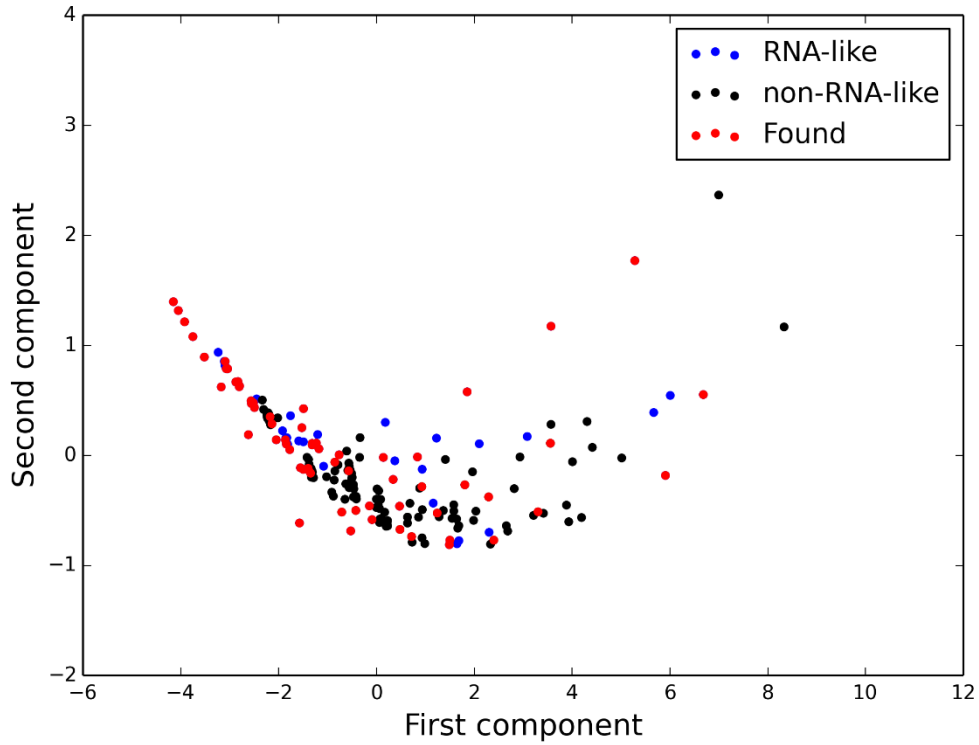


## Supplemental material

### 1. $k$ -NN clustering result

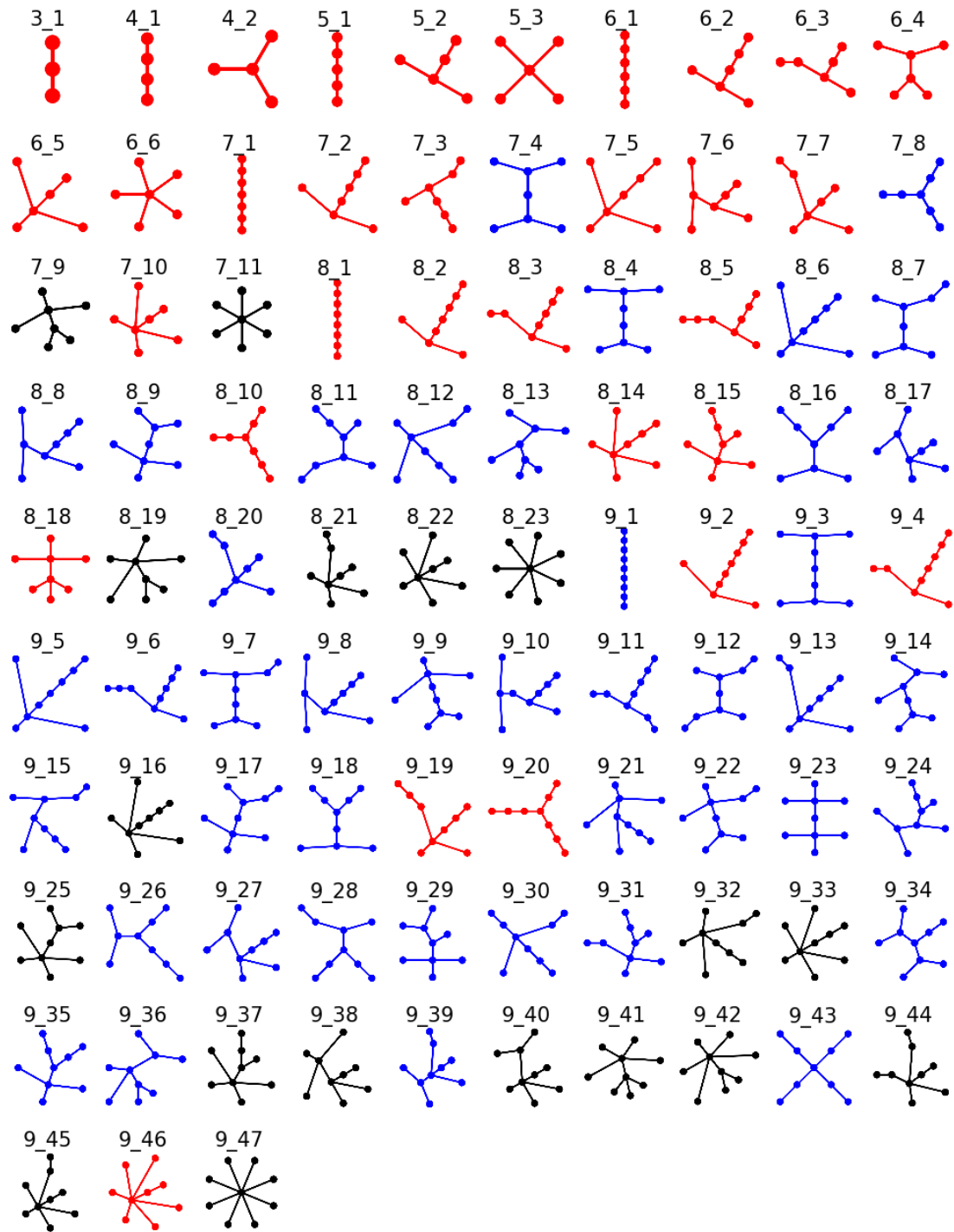


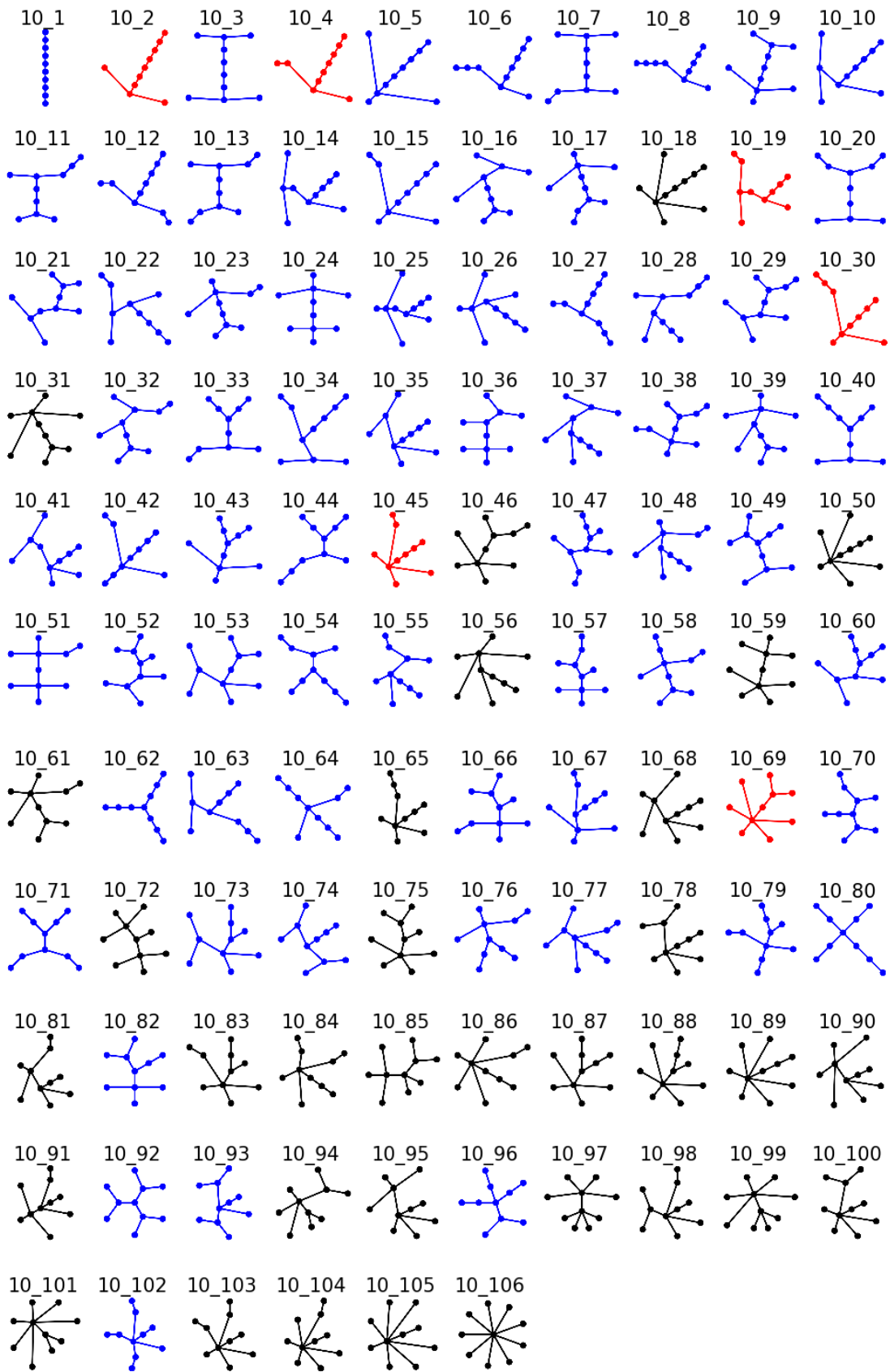
**Figure 1 Plot of  $k$ -NN clustering result.** In this plot, the number of neighbors is set to 3. The plot of the PAM which gives better results is shown as Figure 3 in the main text.

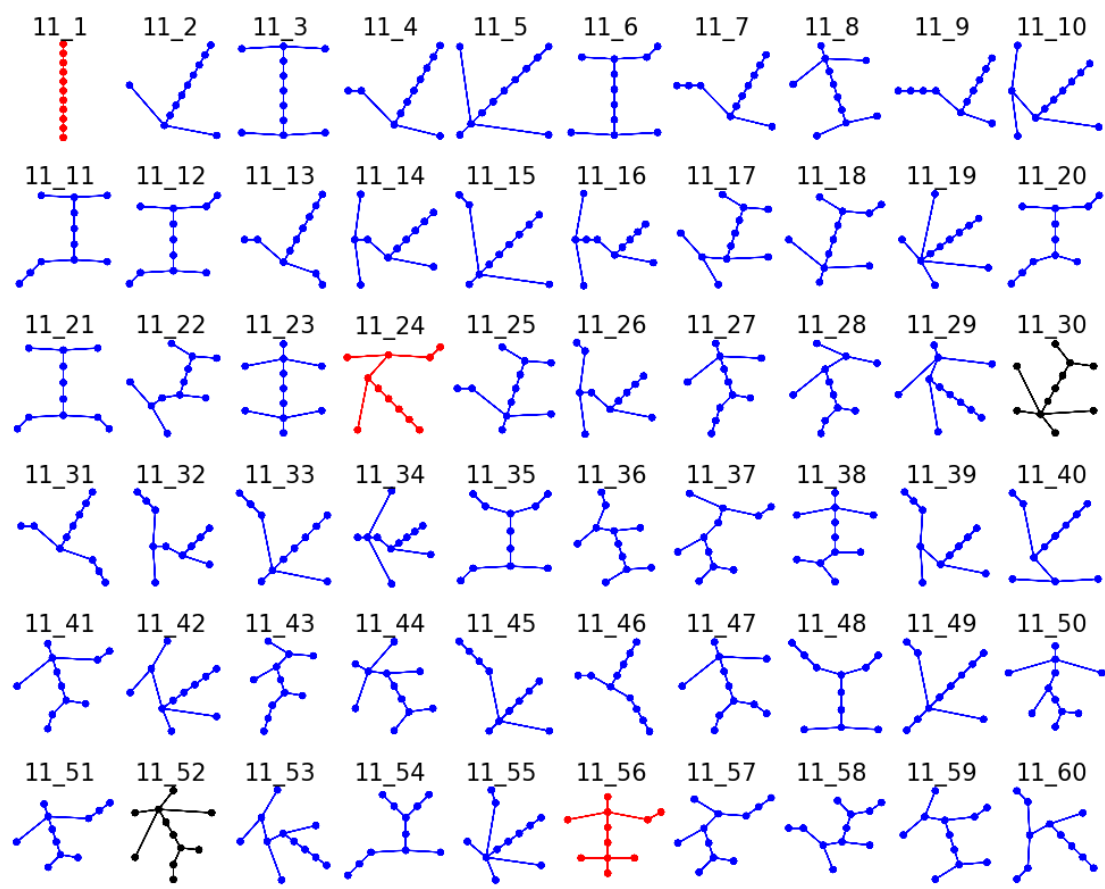
**Table 1 Accuracy of  $k$ -NN based on LOOCV.** Cross-validation on the  $k$ -NN clustering result for tree graphs with the currently available dataset does not yield good accuracy. The procedure of LOOCV is described in the main text.

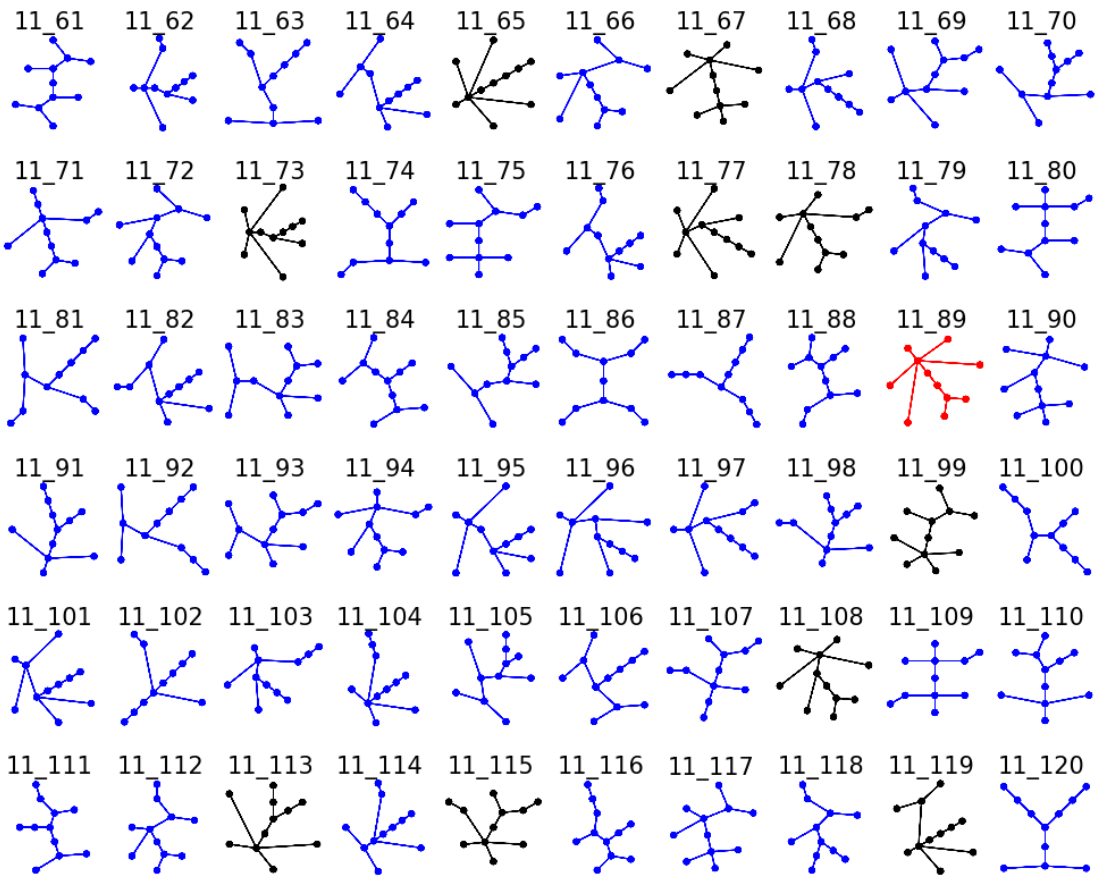
# neighbors	Accuracy /%
1	59.39
3	53.94
5	49.24
7	46.82
9	45.45

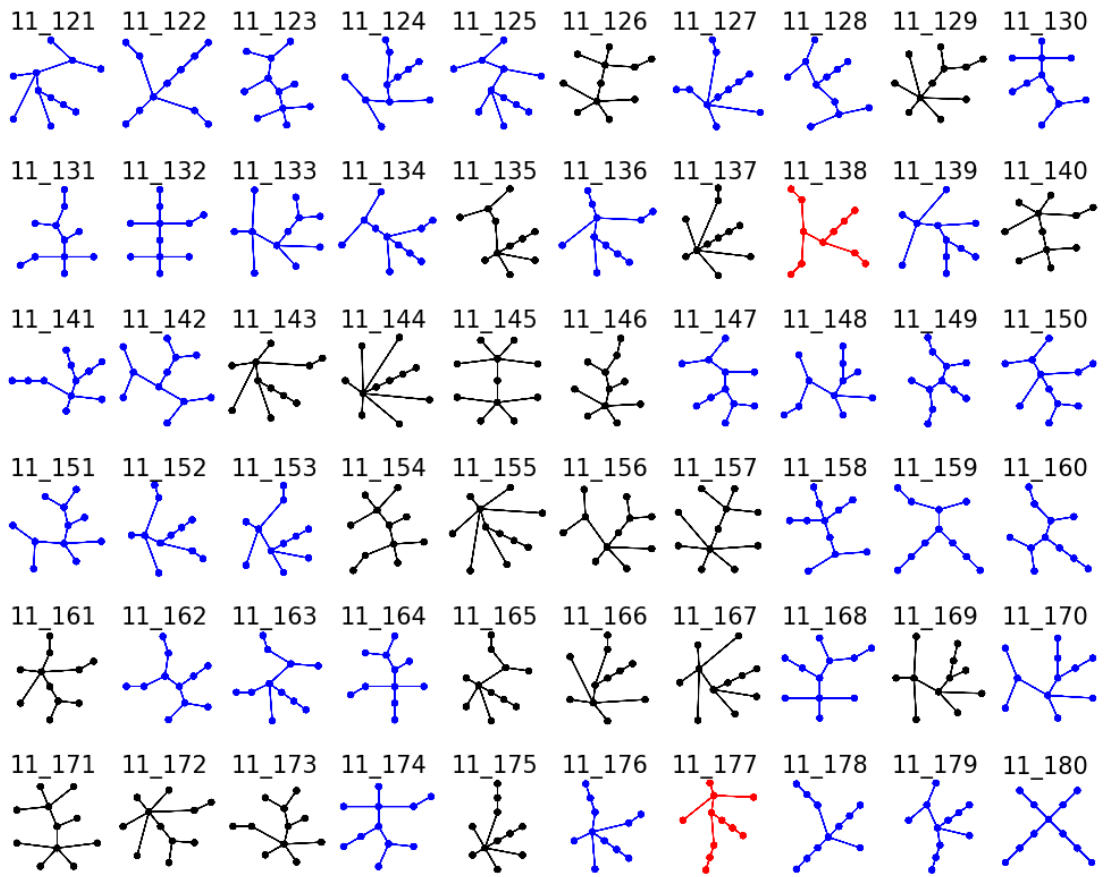
## 2. RAG full catalogue

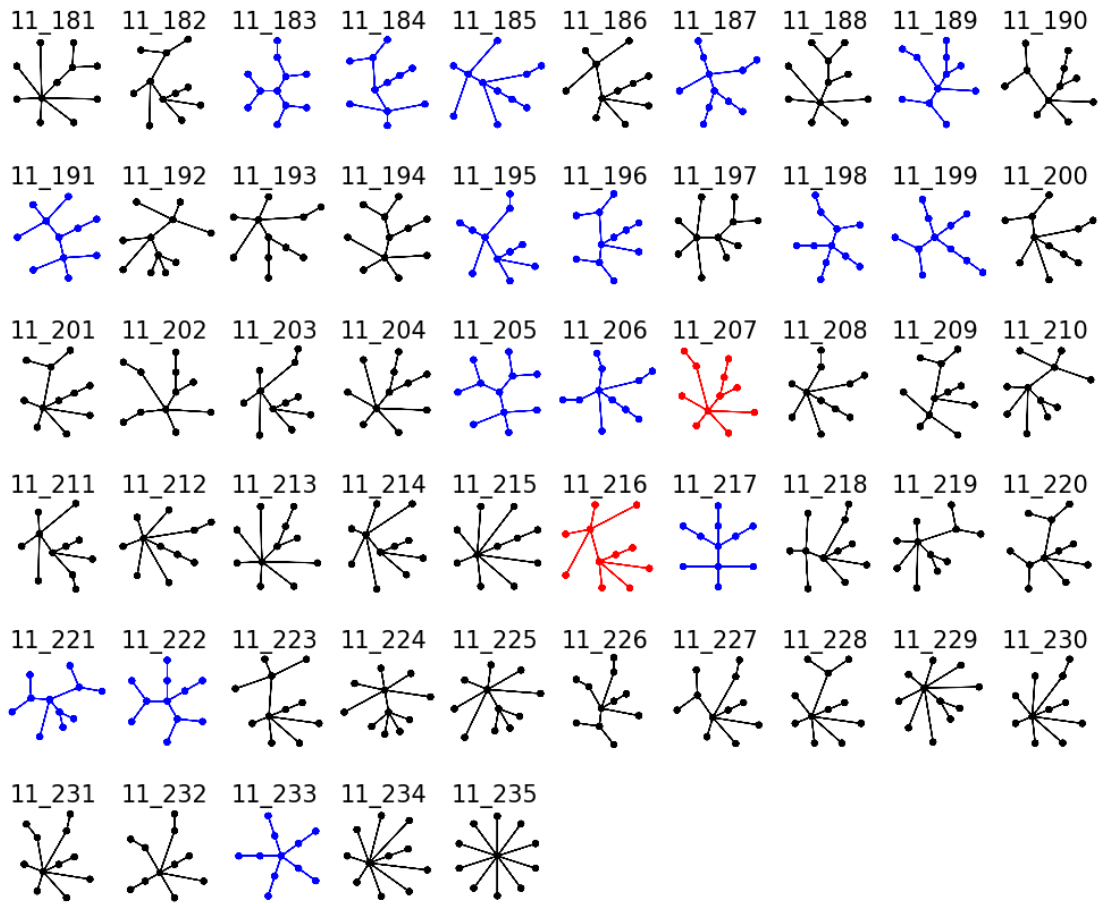


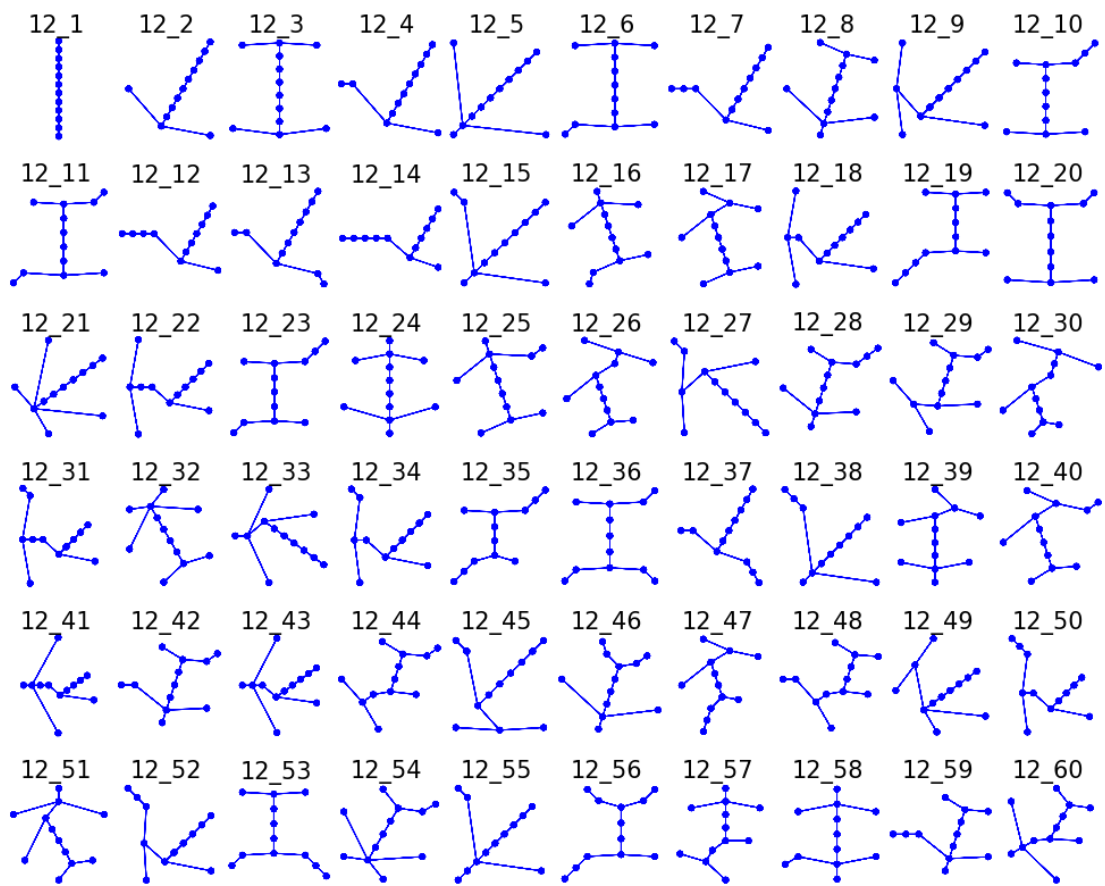




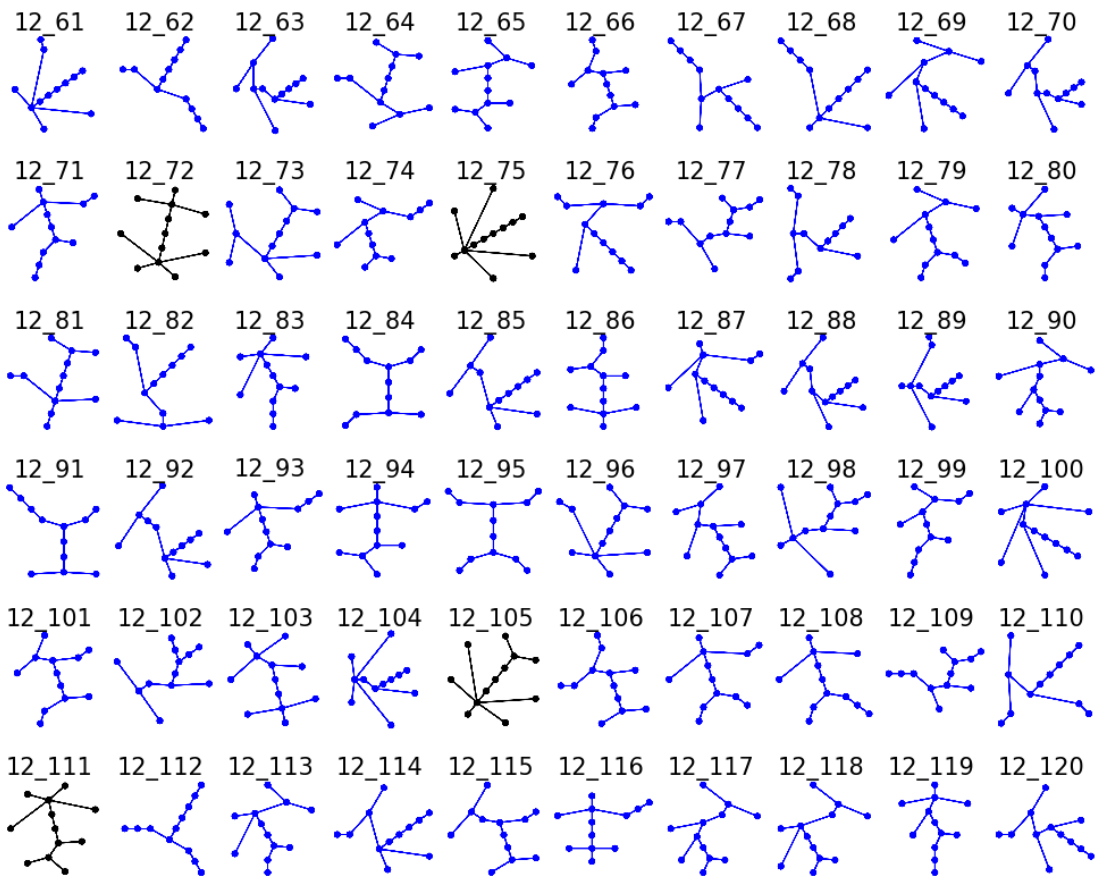


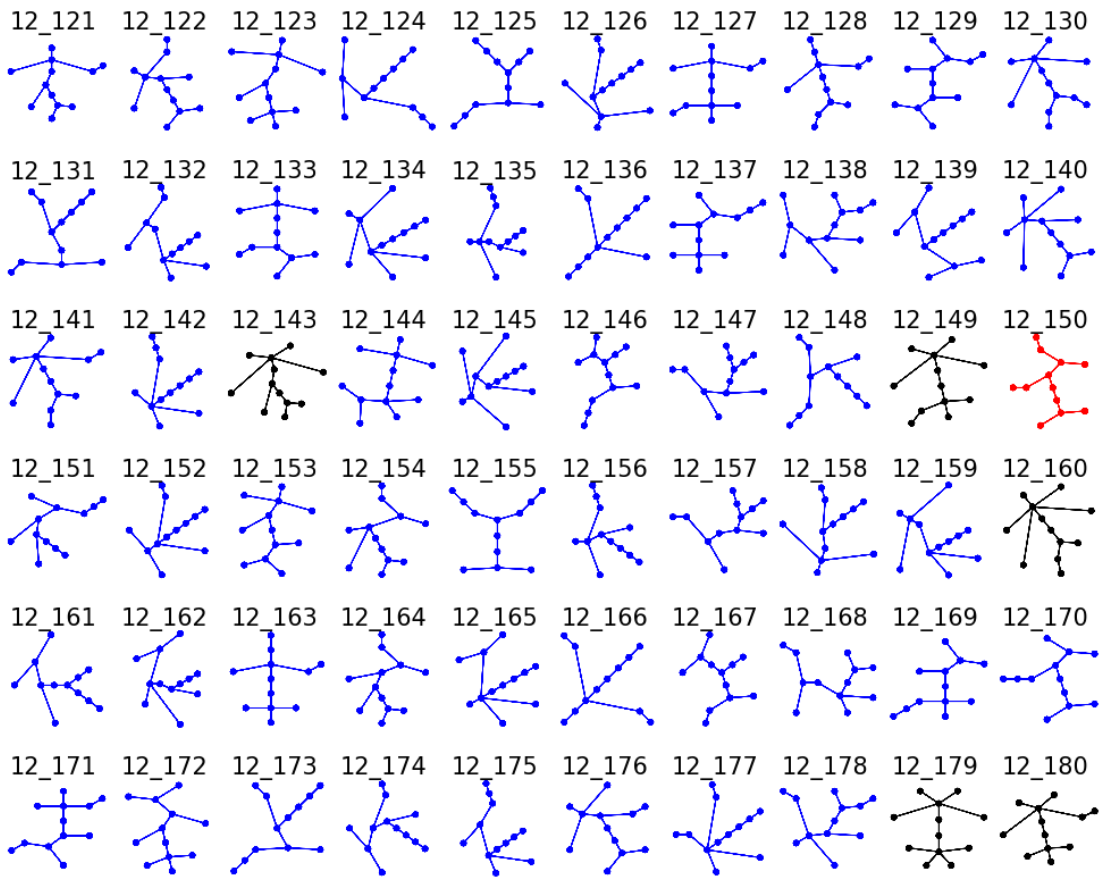


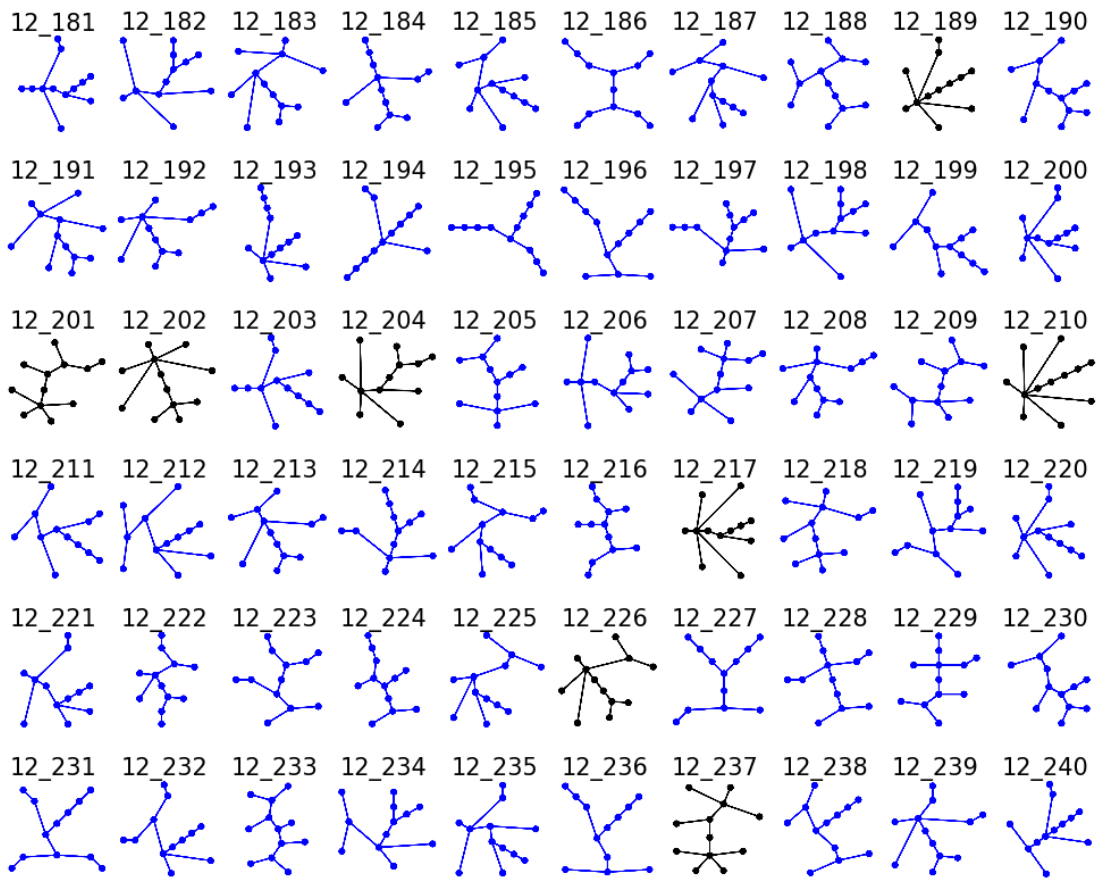


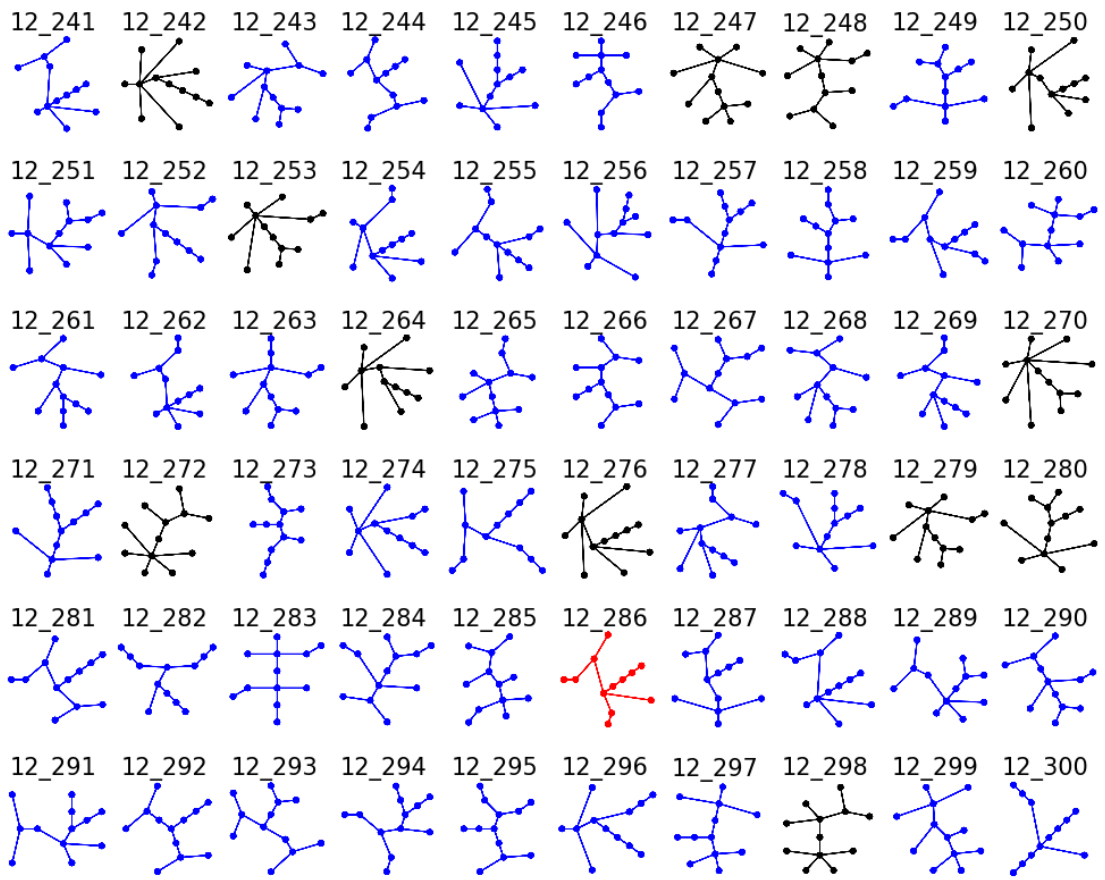


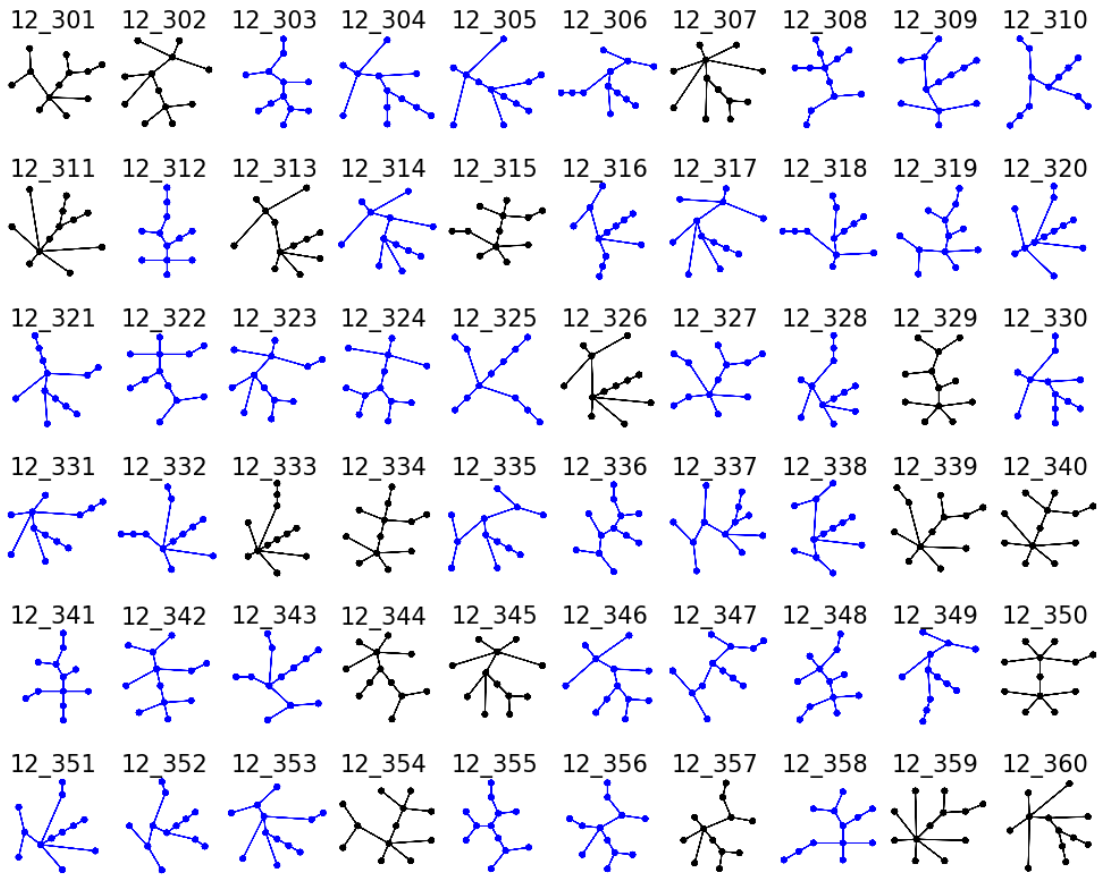


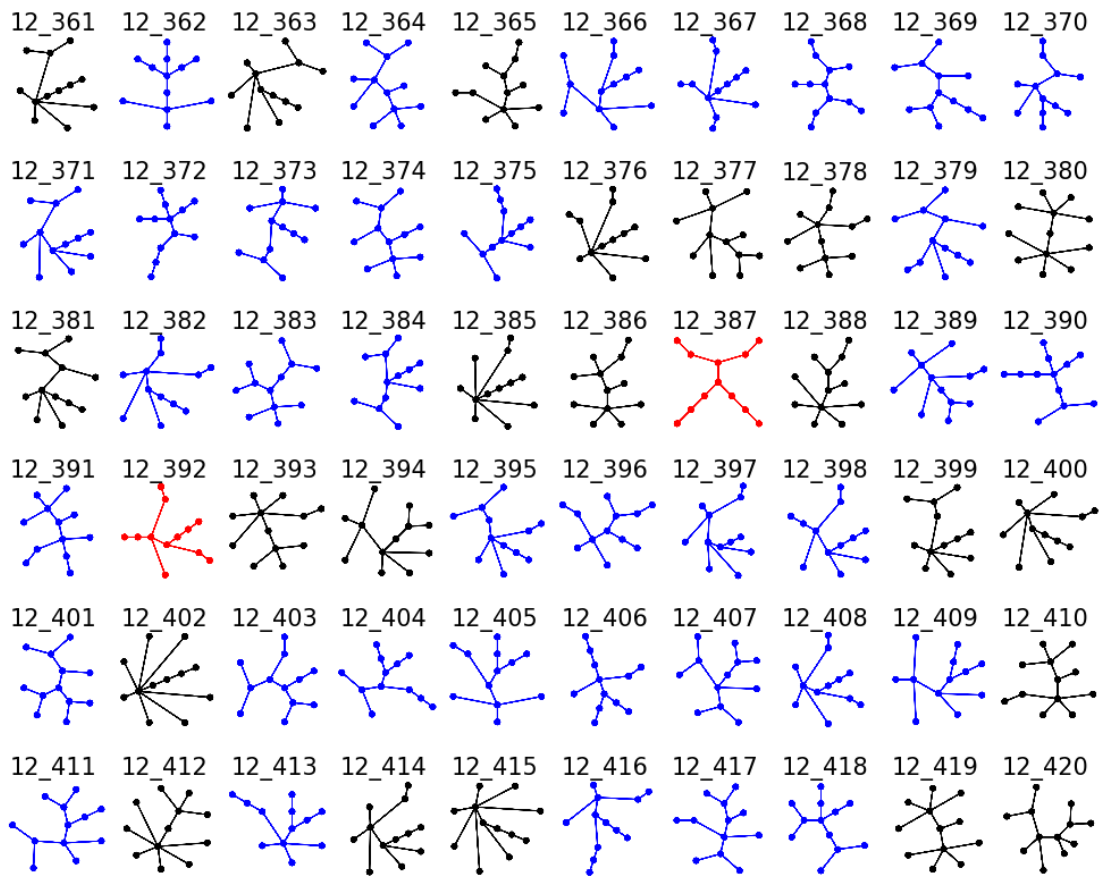


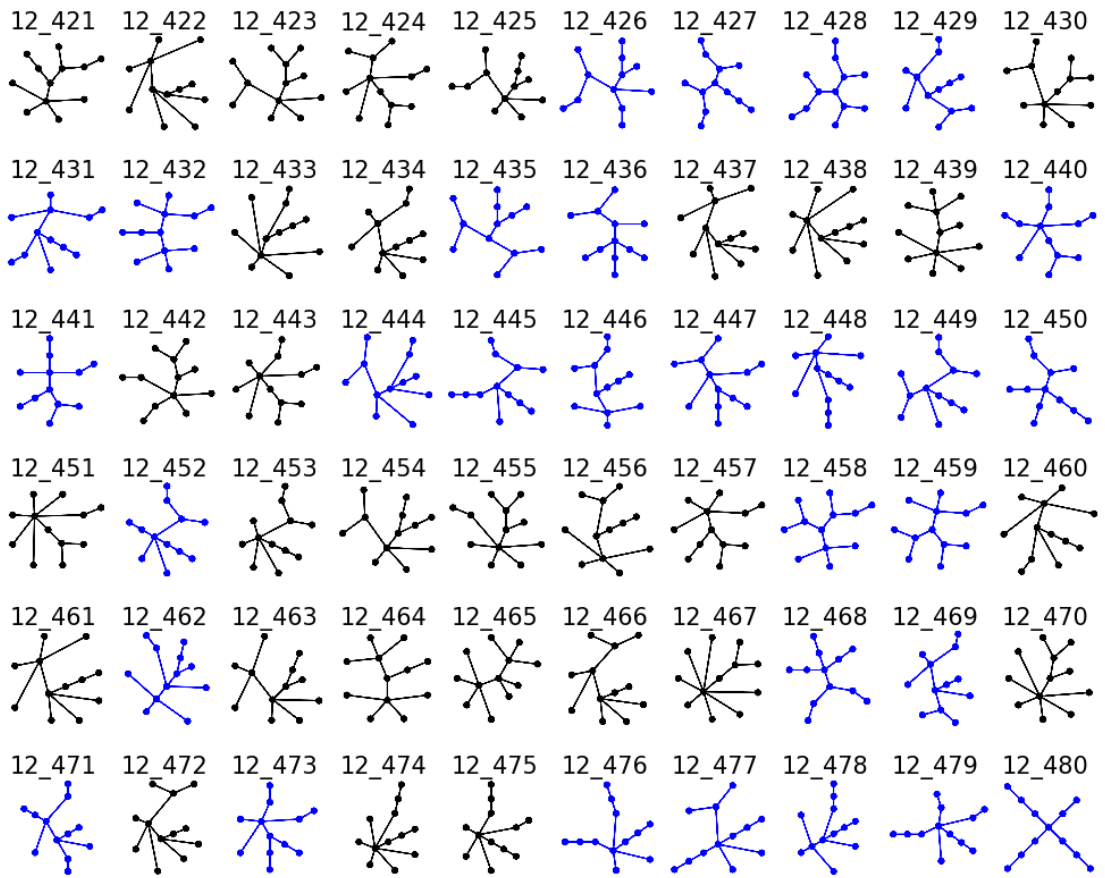


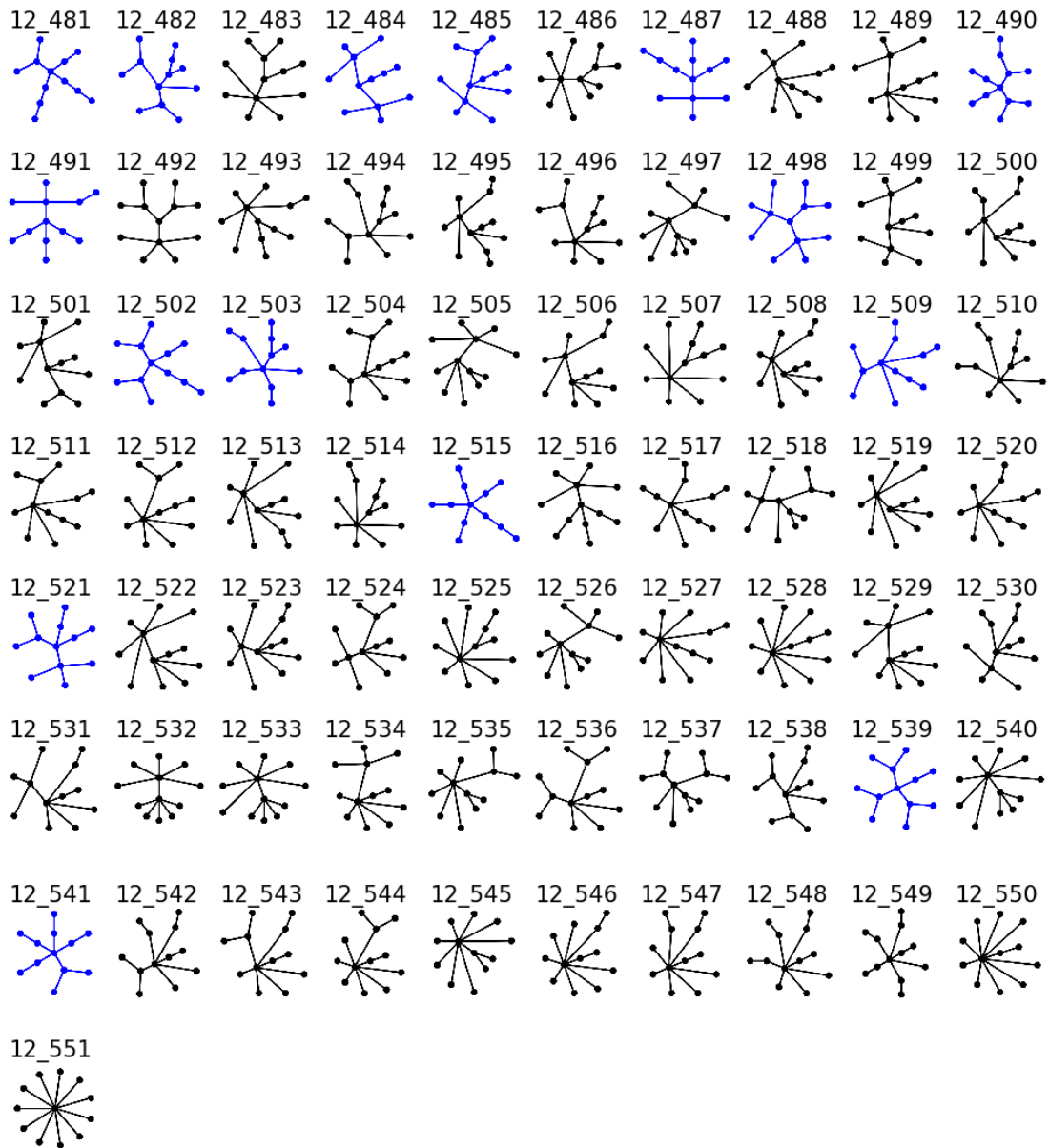




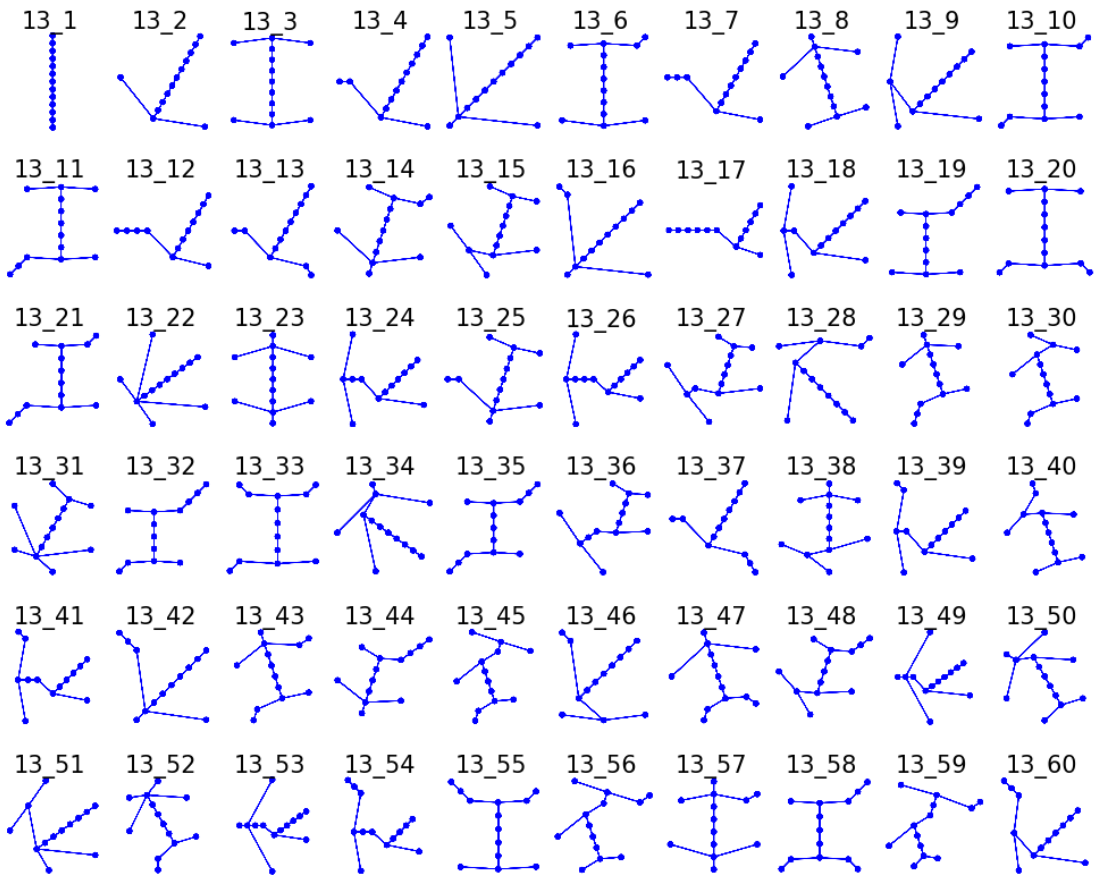


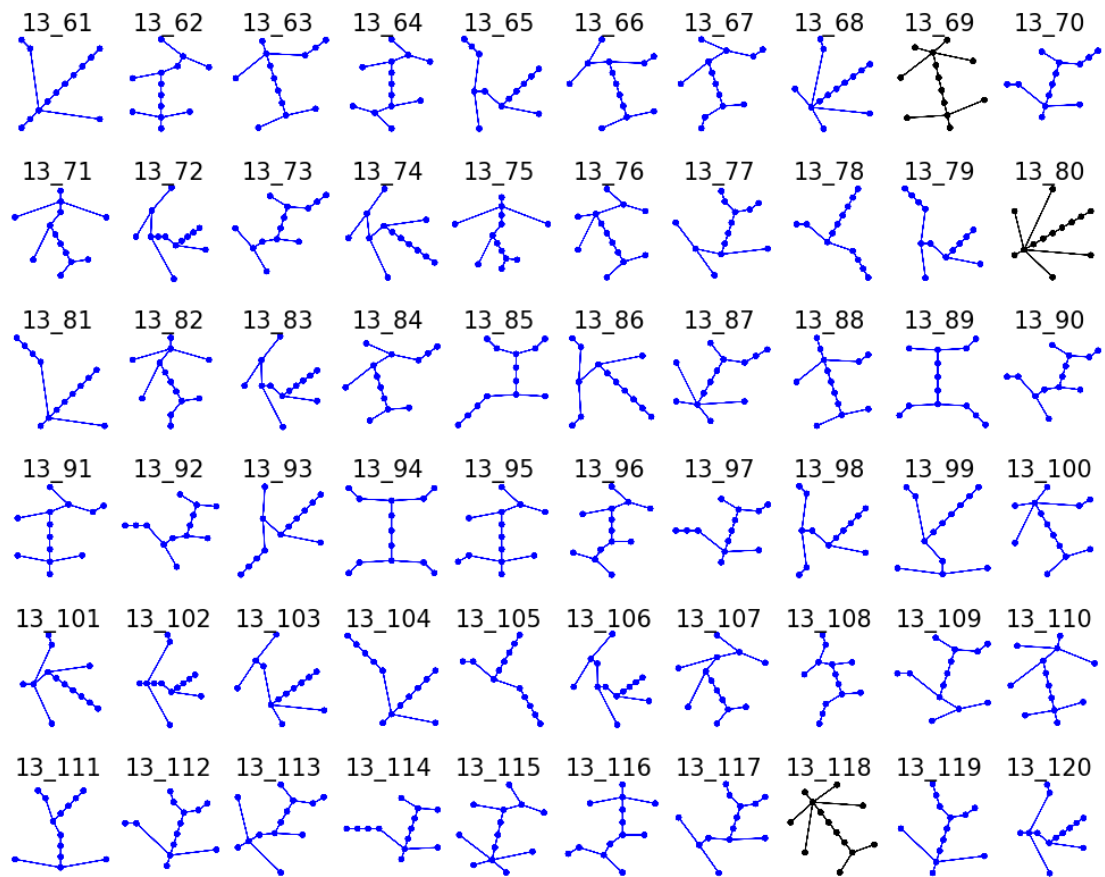


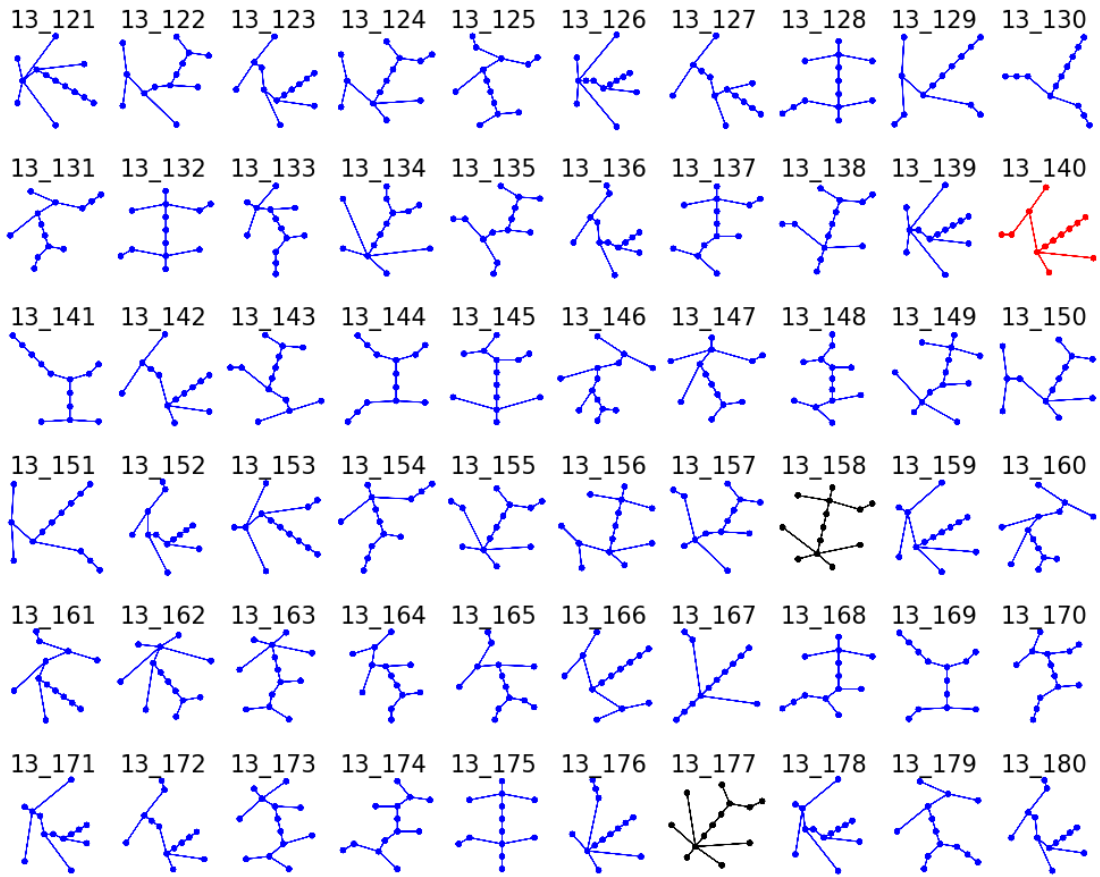


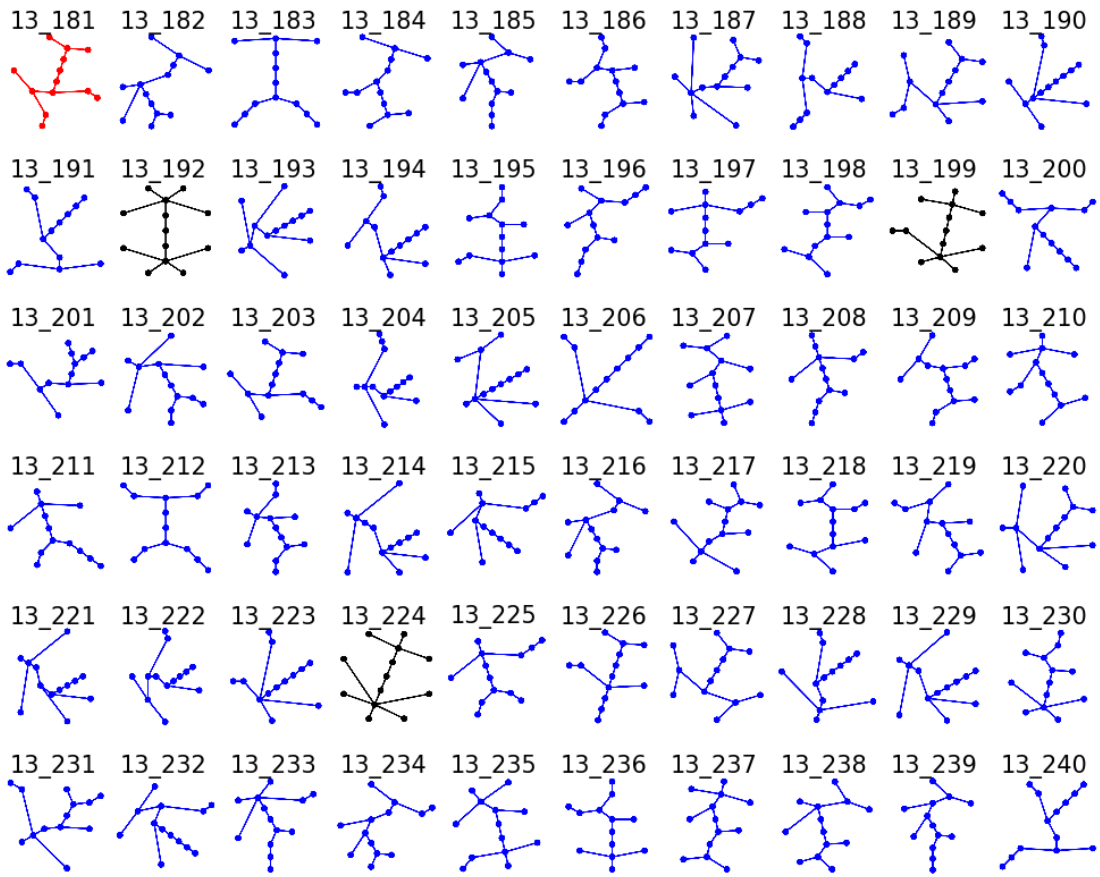


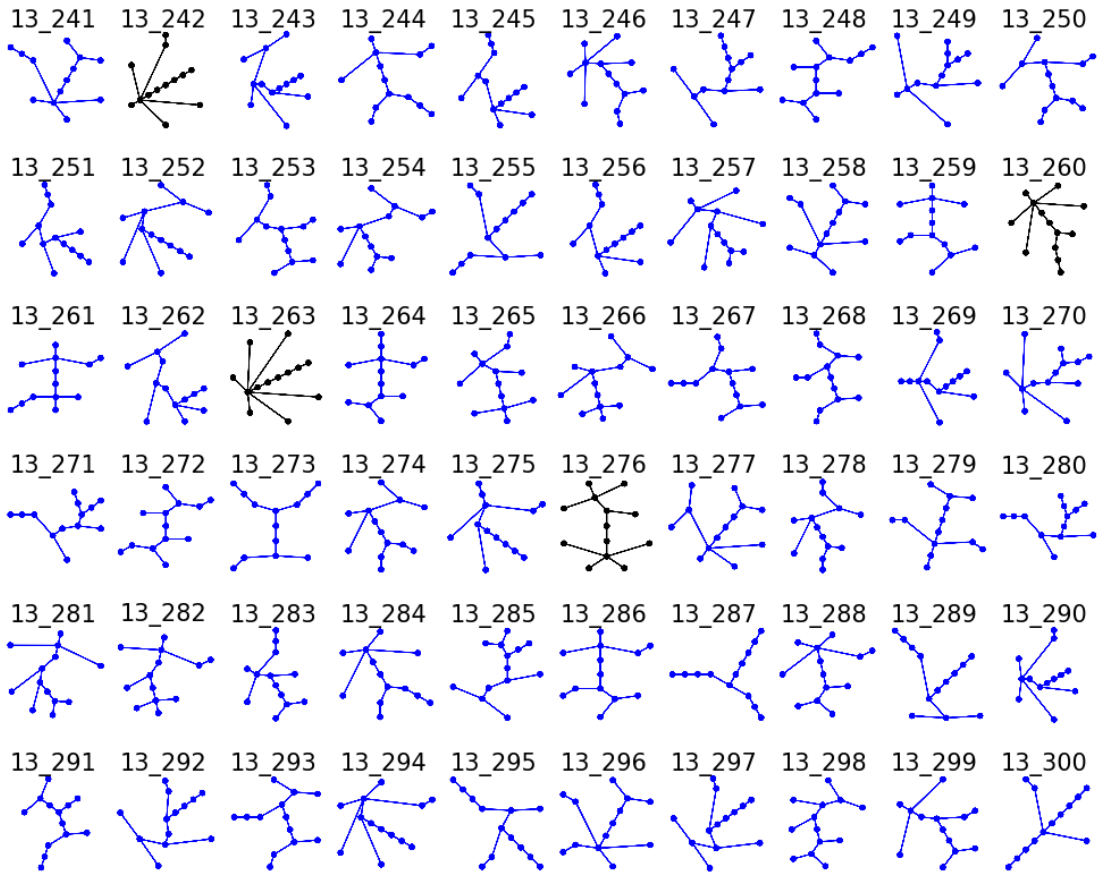


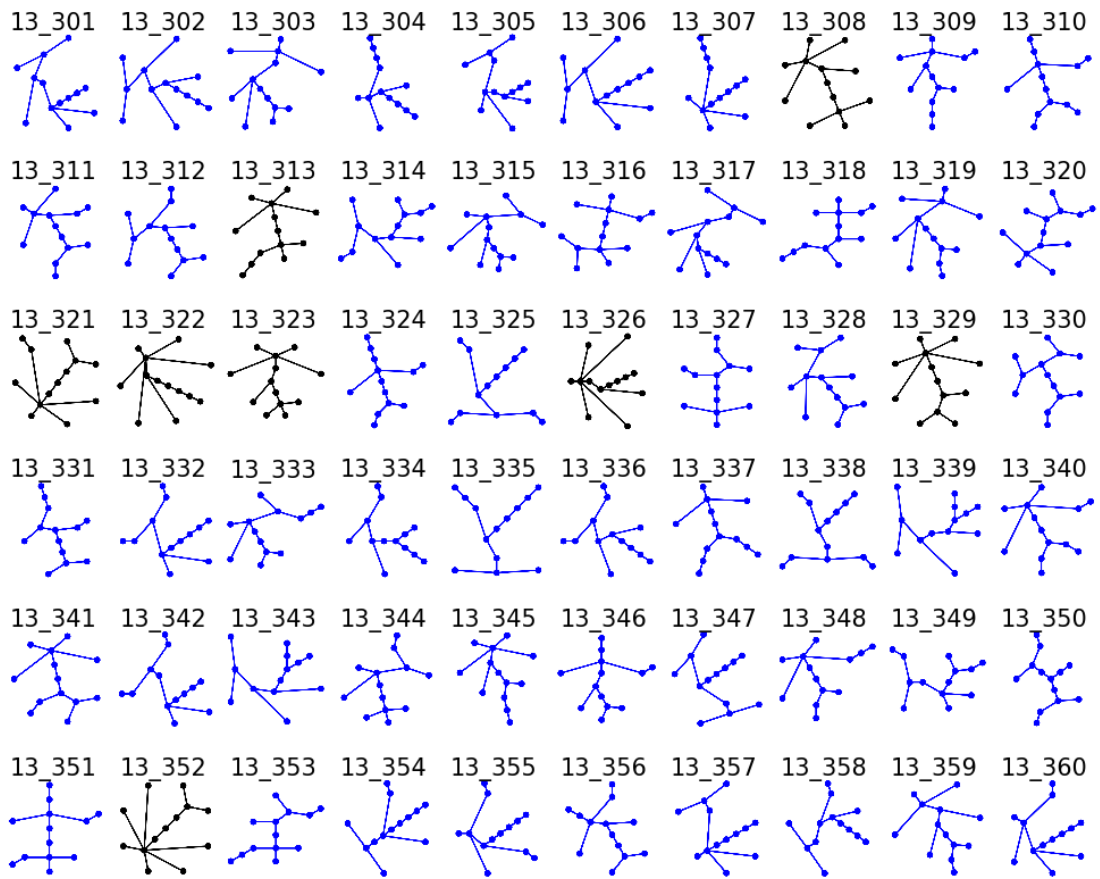


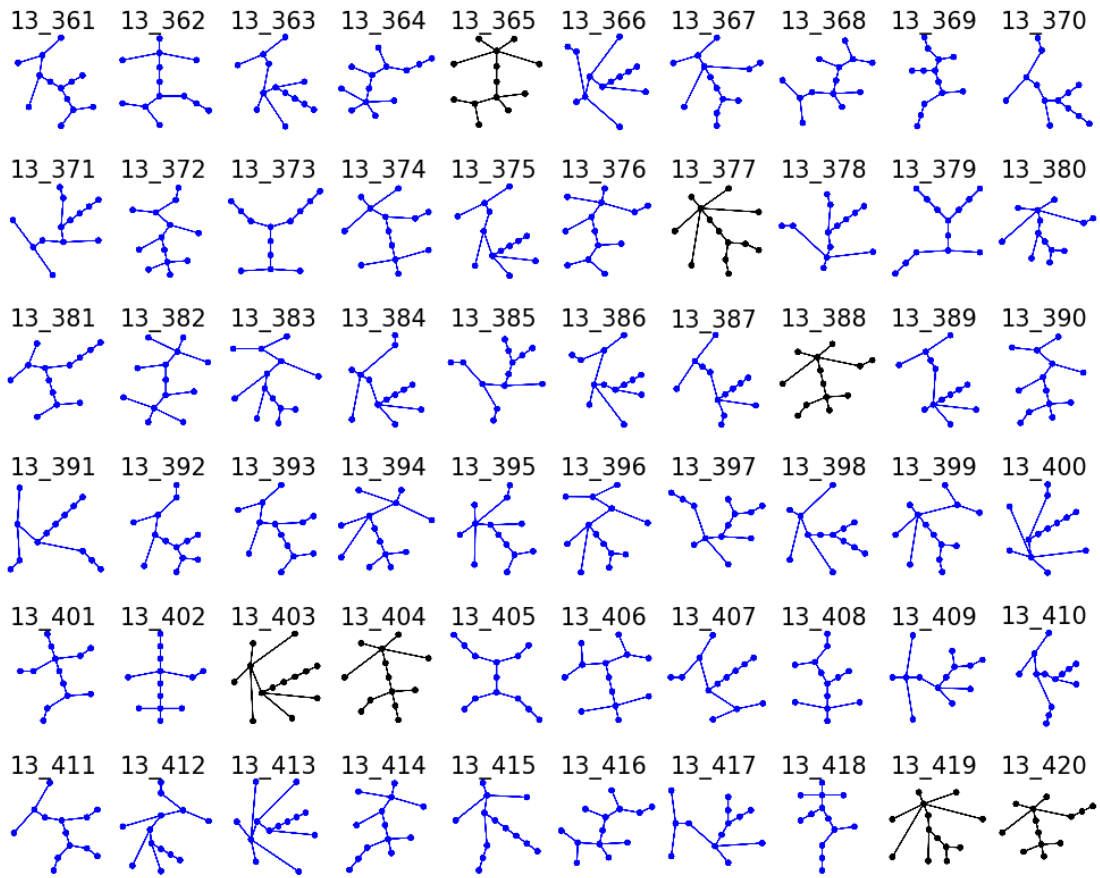


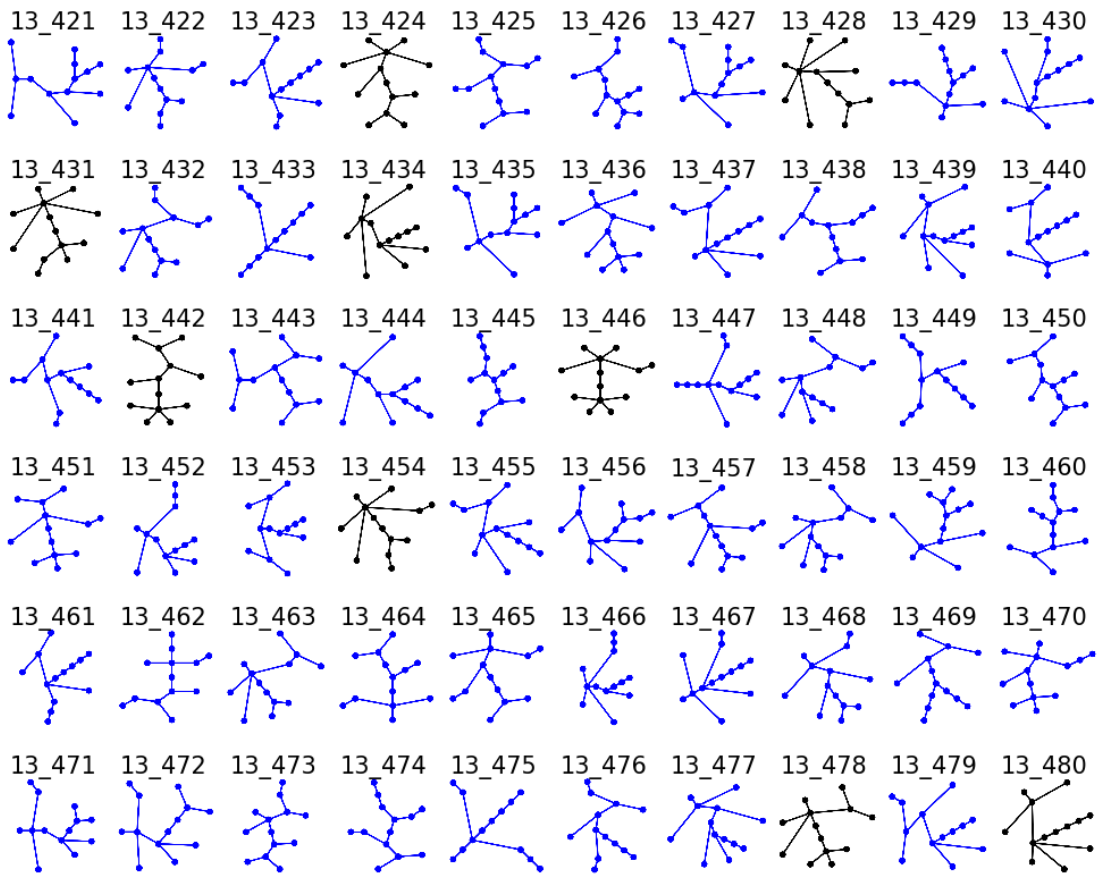




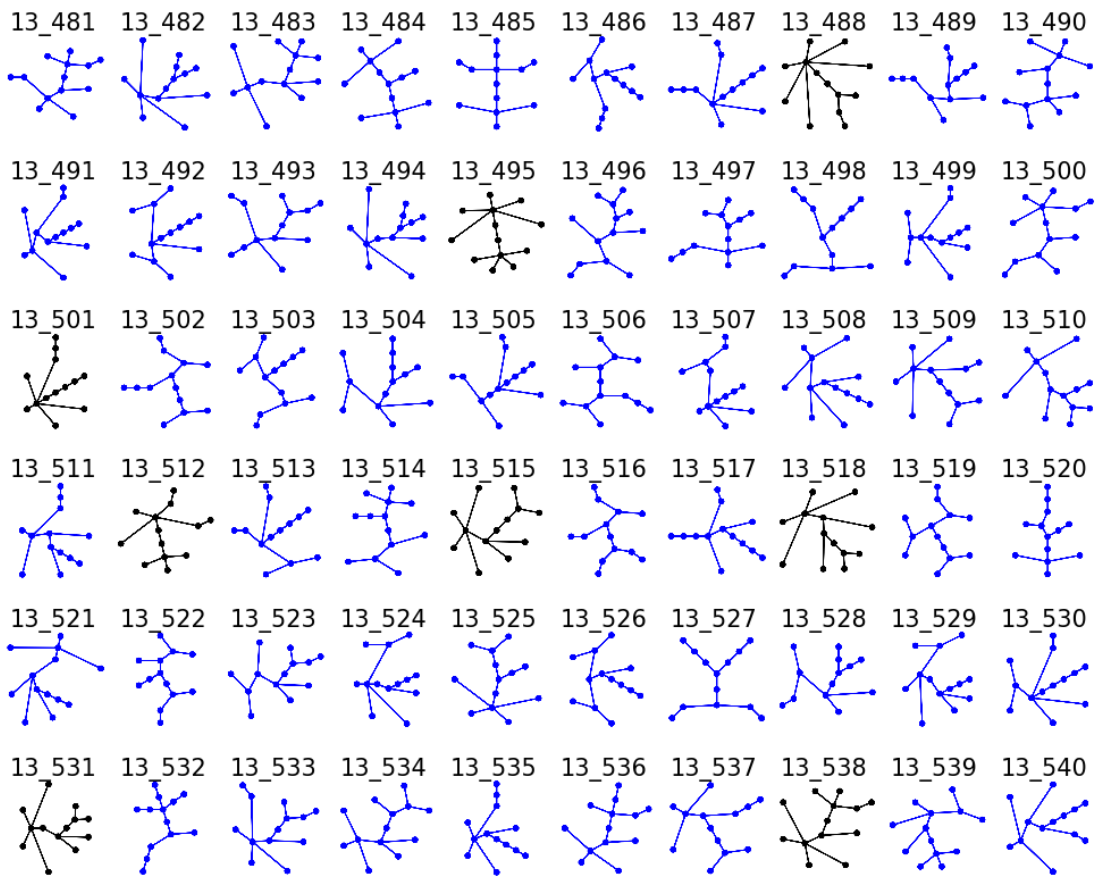


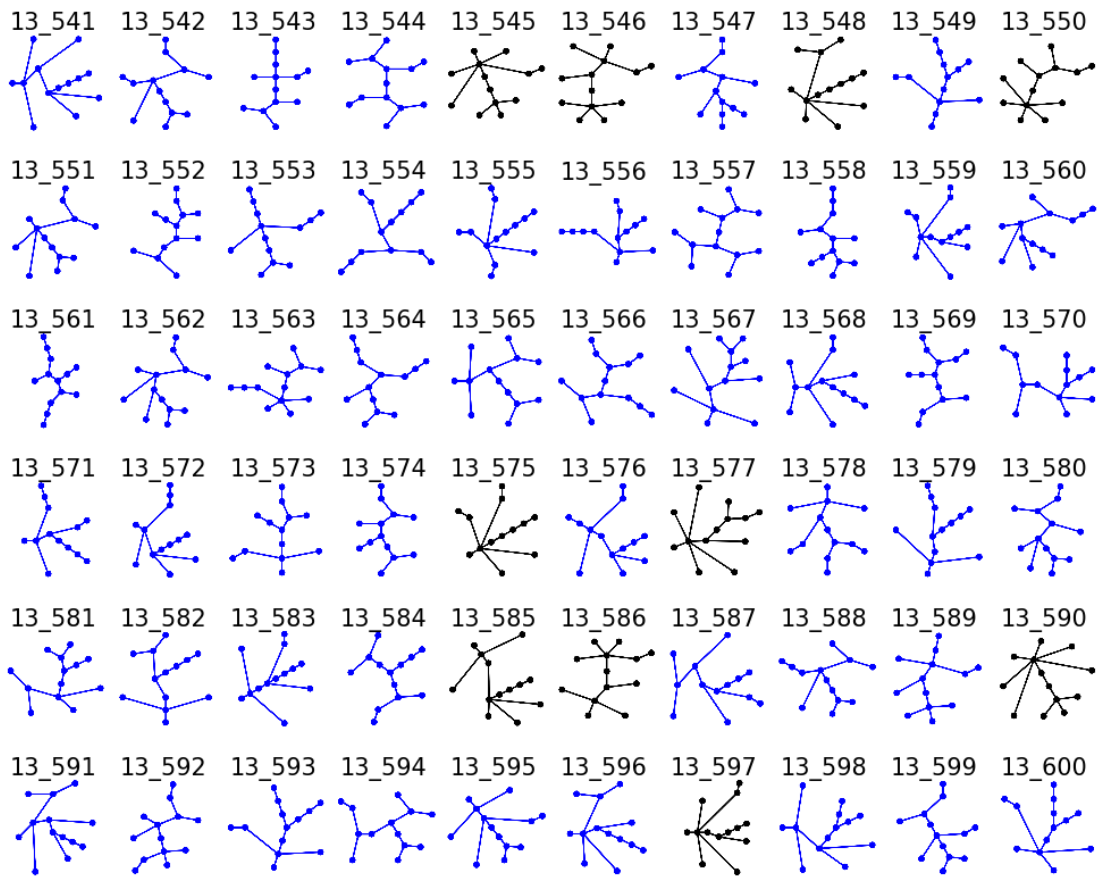


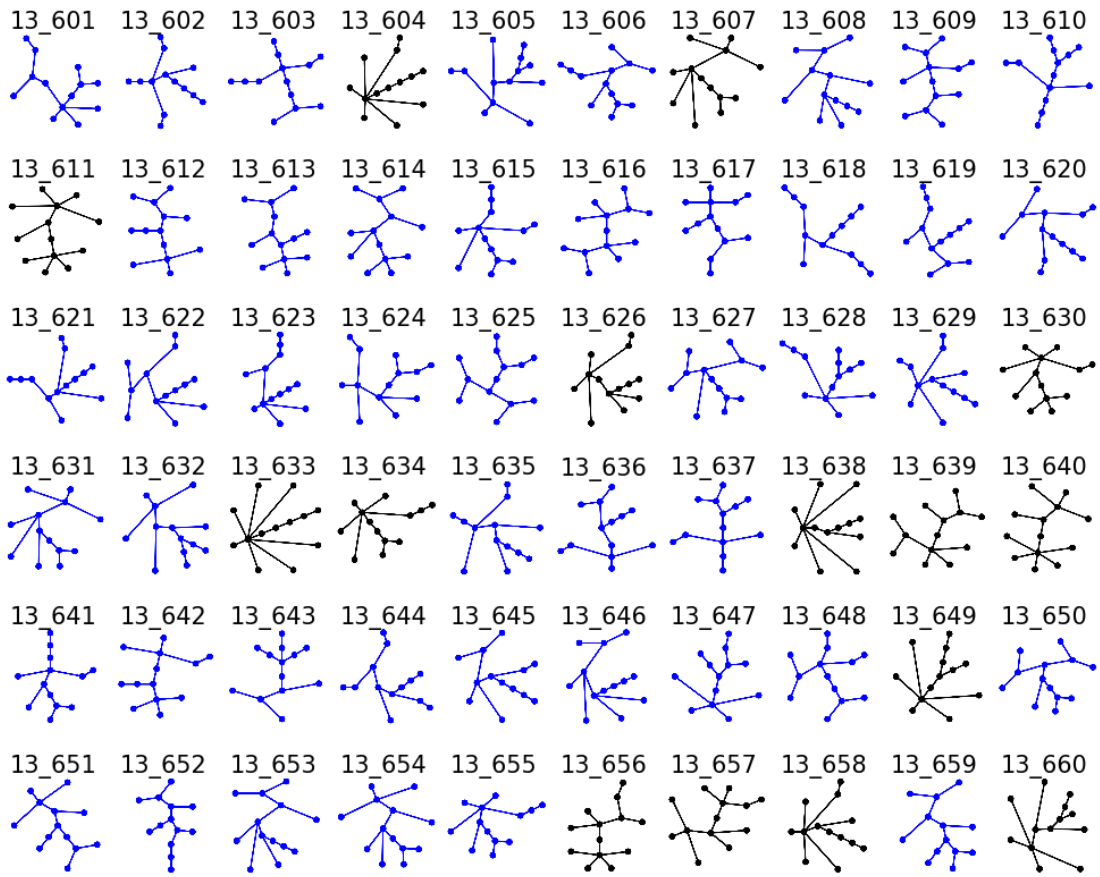


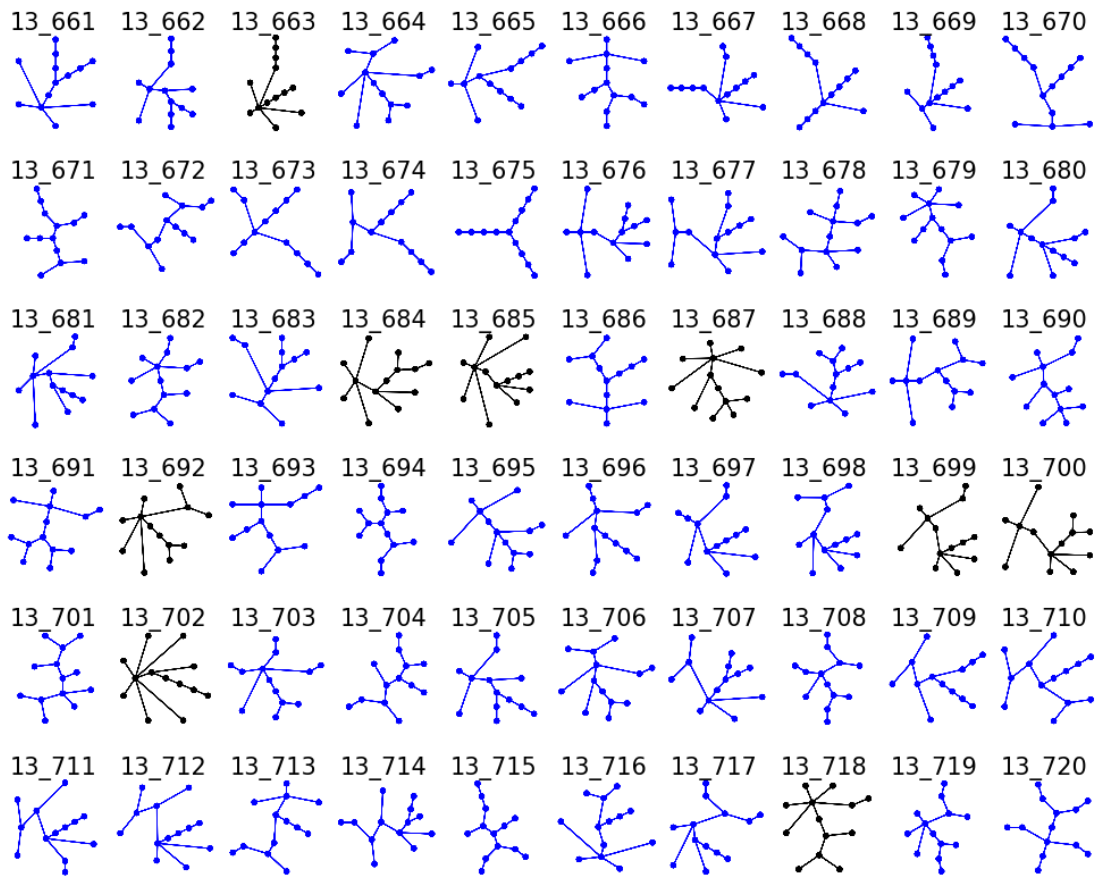


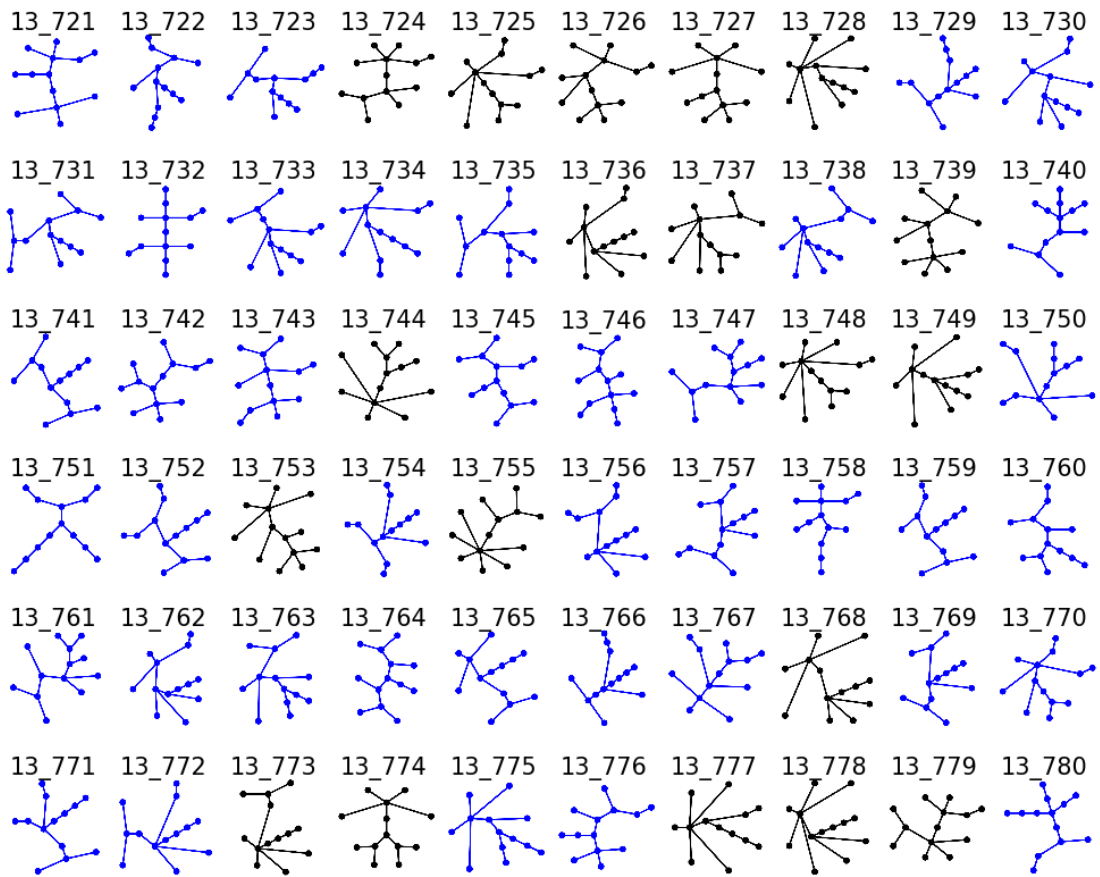


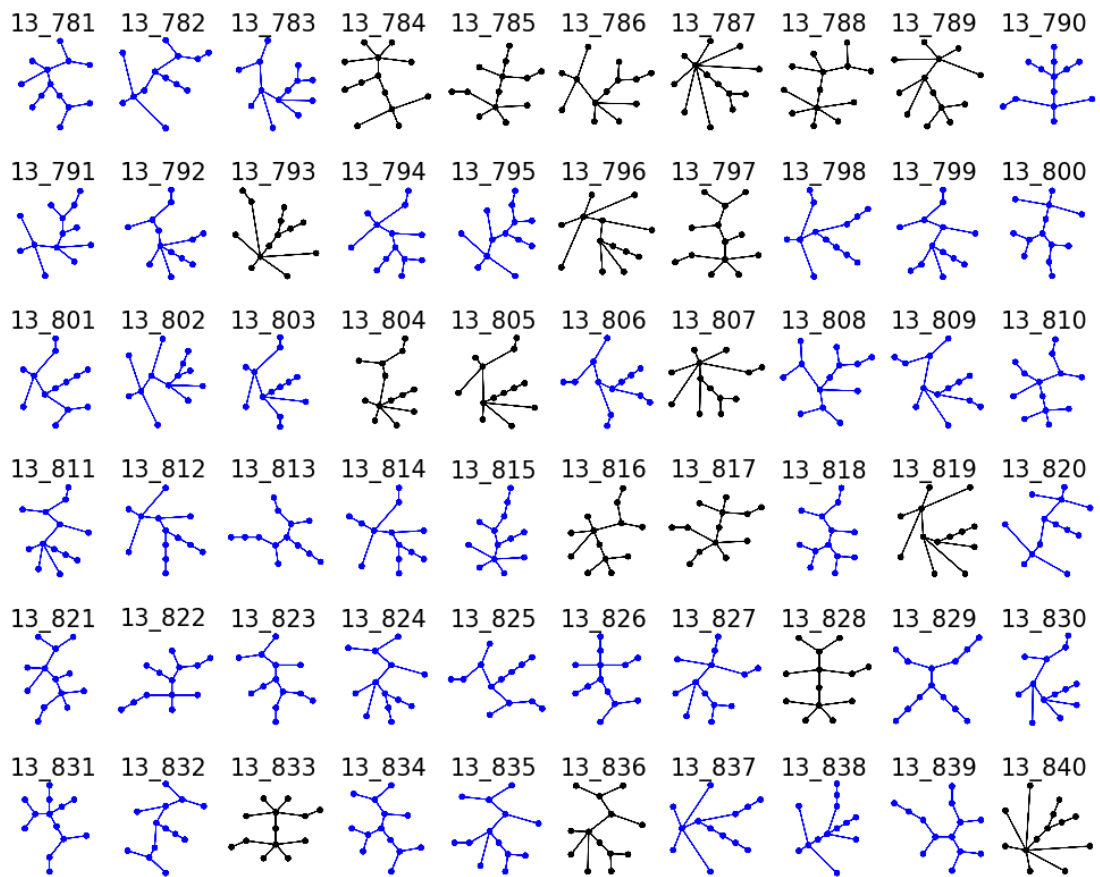


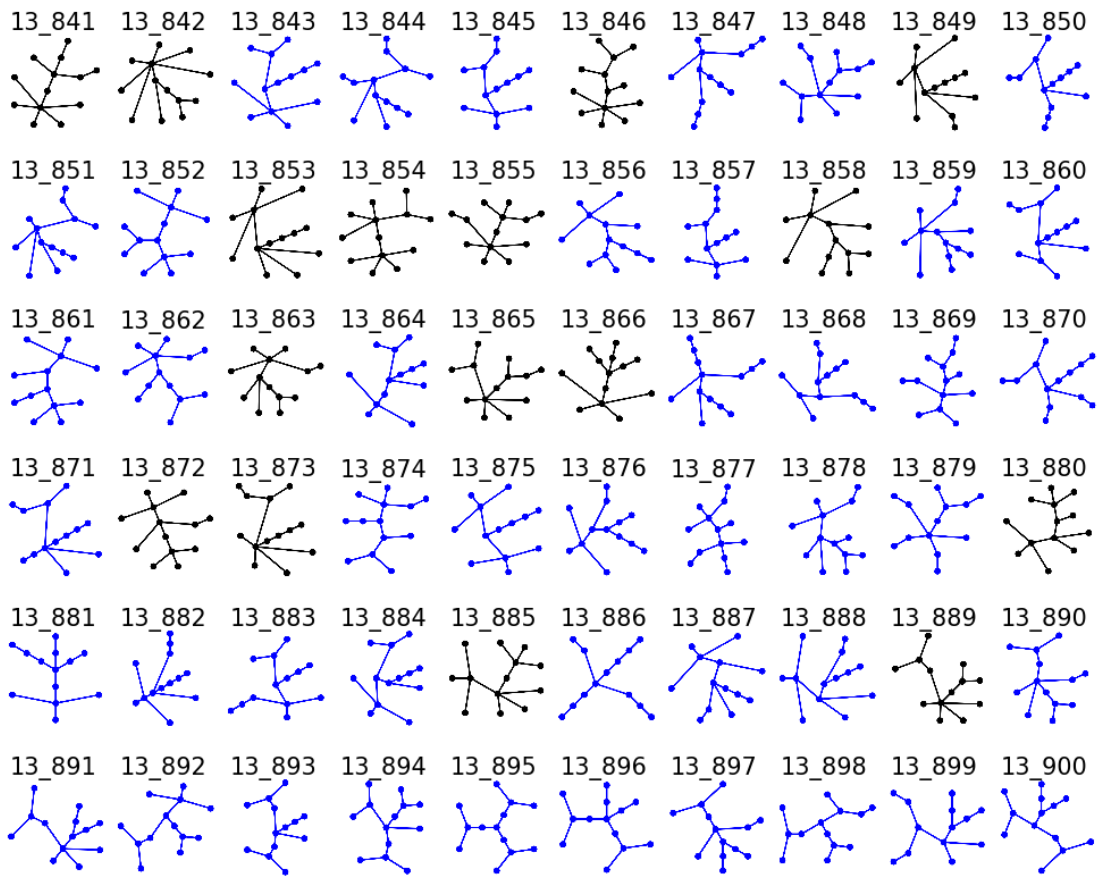


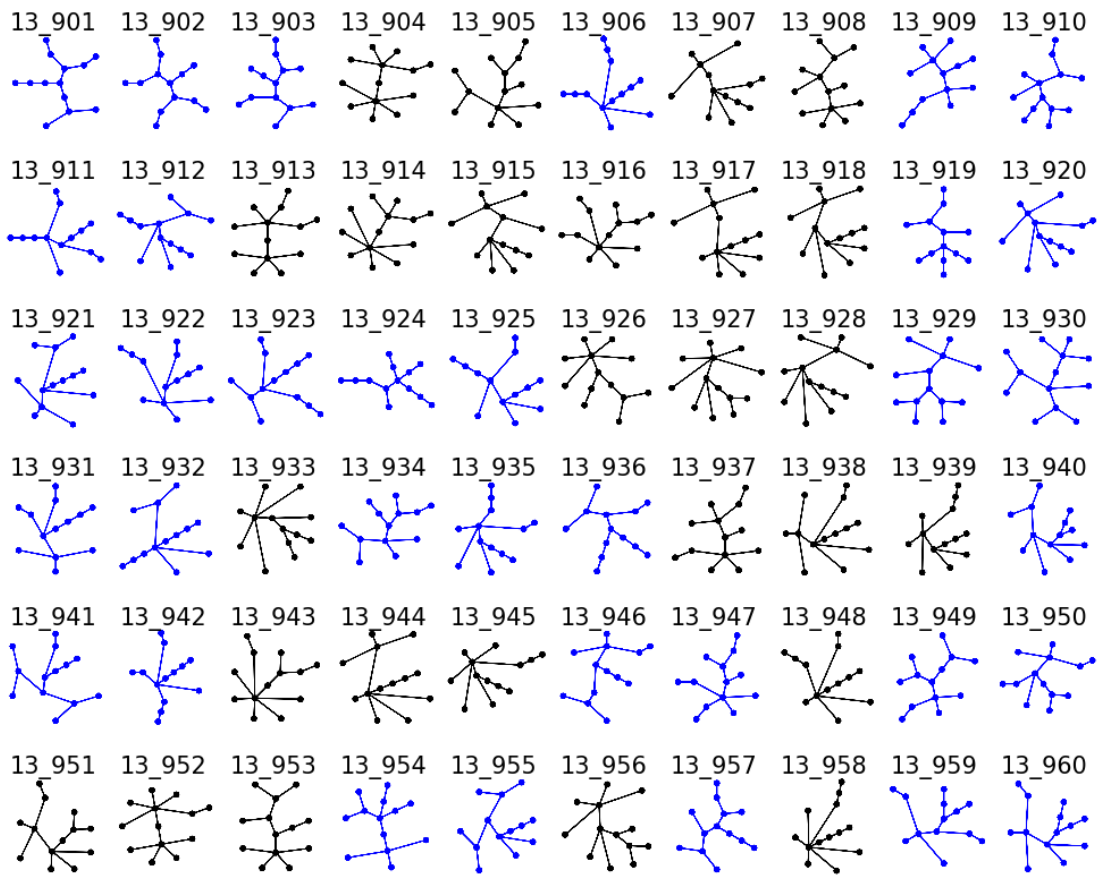




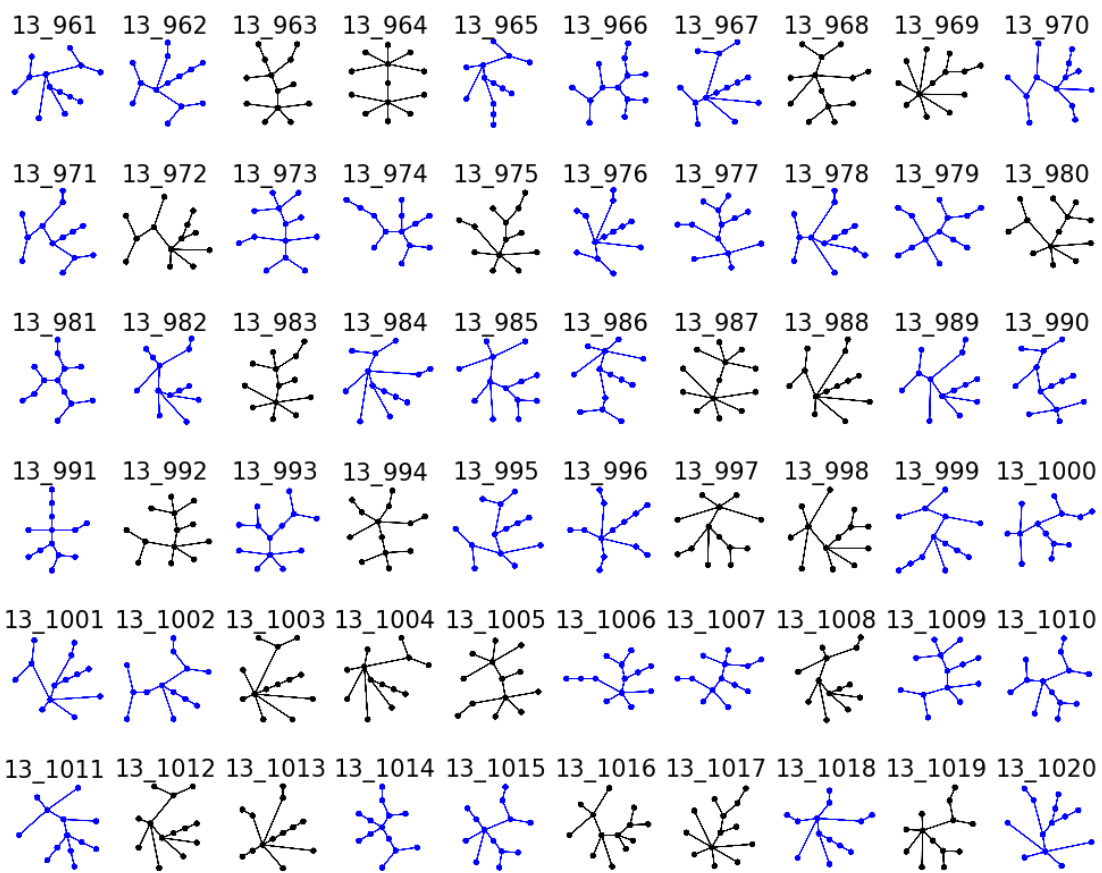




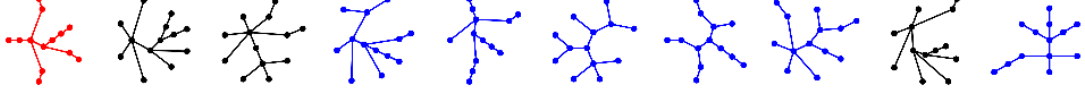




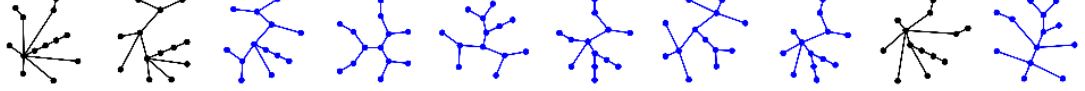




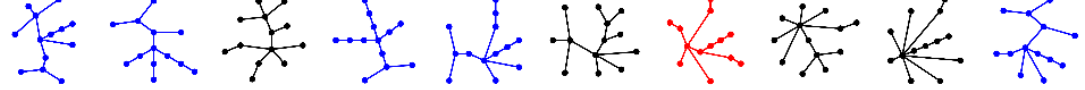
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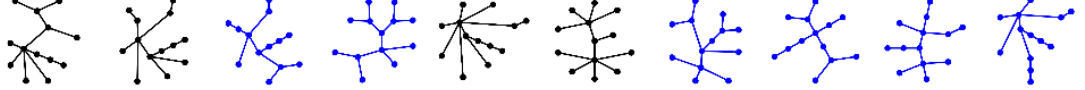
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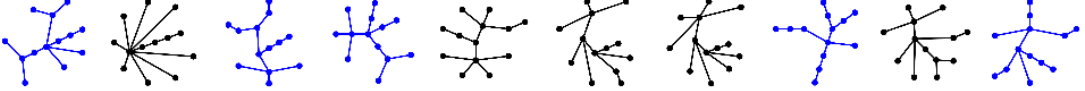
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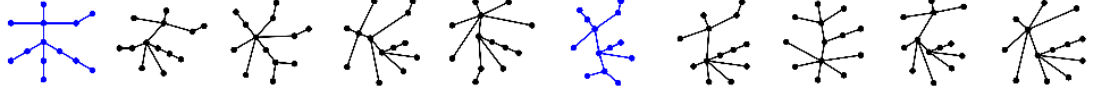
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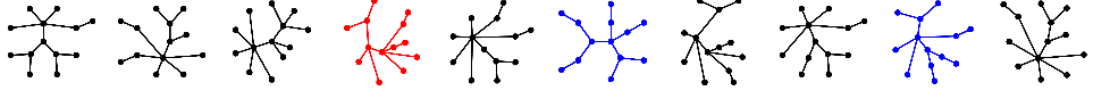
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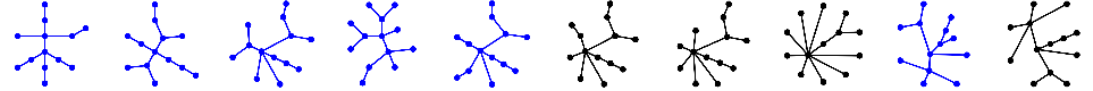
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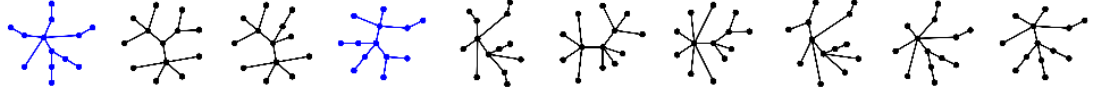
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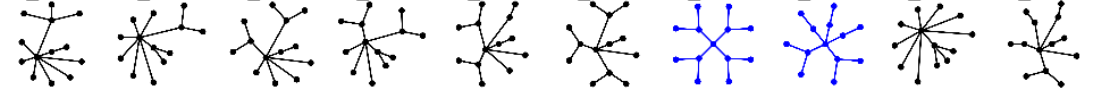
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13\_1301

