```
In[ ]:= SetDirectory[
          "C:/Users/serha/OneDrive/Masaüstü/MyRepo/master_thesis_MMT003/210507_time_windows_and
            _OR_model"];
```

Data Import_Fixed Boundaries

```
In[ ]:= modularityvalues12m4p4 = Import["plot_values/(-4,4)-modularityvalues-fss.mx"];
        modularityvalues12m1p1 = Import["plot_values/(-1,1)-modularityvalues-fss.mx"];
        modularityvalues12m2m4 = Import["plot_values/(-2,-4)-modularityvalues-fss.mx"];
        modularityvalues12p2p4 = Import["plot_values/(2,4)-modularityvalues-fss.mx"];

        modularityvalues32m4p4 = Import["plot_values/(-4,4)-modularityvalues-fbs.mx"];
        modularityvalues32m1p1 = Import["plot_values/(-1,1)-modularityvalues-fbs.mx"];
        modularityvalues32m2m4 = Import["plot_values/(-2,-4)-modularityvalues-fbs.mx"];
        modularityvalues32p2p4 = Import["plot_values/(2,4)-modularityvalues-fbs.mx"];
```

In[ ]:=
```
singlerandomerdrenmodularityvalues12m4p4 =
  Import["plot_values/(-4,4)-singrand-erd-modularityvalues-fss.mx"];
singlerandomcommmodularityvalues12m4p4 =
  Import["plot_values/(-4,4)-singrand-comm-modularityvalues-fss.mx"];
singlerandomerdrenmodularityvalues12m1p1 =
  Import["plot_values/(-1,1)-singrand-erd-modularityvalues-fss.mx"];
singlerandomcommmodularityvalues12m1p1 =
  Import["plot_values/(-1,1)-singrand-comm-modularityvalues-fss.mx"];
singlerandomerdrenmodularityvalues12m2m4 =
  Import["plot_values/(-2,-4)-singrand-erd-modularityvalues-fss.mx"];
singlerandomcommmodularityvalues12m2m4 =
  Import["plot_values/(-2,-4)-singrand-comm-modularityvalues-fss.mx"];
singlerandomerdrenmodularityvalues12p2p4 =
  Import["plot_values/(2,4)-singrand-erd-modularityvalues-fss.mx"];
singlerandomcommmodularityvalues12p2p4 =
  Import["plot_values/(2,4)-singrand-comm-modularityvalues-fss.mx"];

singlerandomerdrenmodularityvalues32m4p4 =
  Import["plot_values/(-4,4)-singrand-erd-modularityvalues-fbs.mx"];
singlerandomcommmodularityvalues32m4p4 =
  Import["plot_values/(-4,4)-singrand-comm-modularityvalues-fbs.mx"];
singlerandomerdrenmodularityvalues32m1p1 =
  Import["plot_values/(-1,1)-singrand-erd-modularityvalues-fbs.mx"];
singlerandomcommmodularityvalues32m1p1 =
  Import["plot_values/(-1,1)-singrand-comm-modularityvalues-fbs.mx"];
singlerandomerdrenmodularityvalues32m2m4 =
  Import["plot_values/(-2,-4)-singrand-erd-modularityvalues-fbs.mx"];
singlerandomcommmodularityvalues32m2m4 =
  Import["plot_values/(-2,-4)-singrand-comm-modularityvalues-fbs.mx"];
singlerandomerdrenmodularityvalues32p2p4 =
  Import["plot_values/(2,4)-singrand-erd-modularityvalues-fbs.mx"];
singlerandomcommmodularityvalues32p2p4 =
  Import["plot_values/(2,4)-singrand-comm-modularityvalues-fbs.mx"];
```

In[ ]:=
```
zscores12m4p4 = Import["plot_values/(-4,4)-zscores-fss.mx"];
zscores12m1p1 = Import["plot_values/(-1,1)-zscores-fss.mx"];
zscores12m2m4 = Import["plot_values/(-2,-4)-zscores-fss.mx"];
zscores12p2p4 = Import["plot_values/(2,4)-zscores-fss.mx"];

zscores32m4p4 = Import["plot_values/(-4,4)-zscores-fbs.mx"];
zscores32m1p1 = Import["plot_values/(-1,1)-zscores-fbs.mx"];
zscores32m2m4 = Import["plot_values/(-2,-4)-zscores-fbs.mx"];
zscores32p2p4 = Import["plot_values/(2,4)-zscores-fbs.mx"];
```

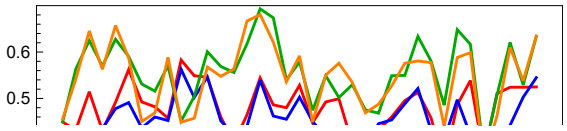
In[ ]:=
```
win2 = 37;
```

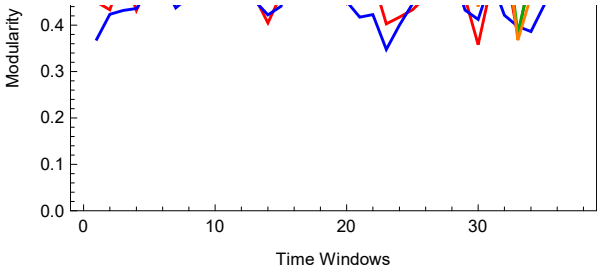
```
In[ ]:= modularityvalues12 = {Thread[{Range@win2, modularityvalues12m4p4}], Thread[
          {Range@win2, modularityvalues12m1p1}], Thread[{Range@win2, modularityvalues12m2m4}],
         Thread[{Range@win2, modularityvalues12p2p4}]};
        modularityvalues32 = {Thread[{Range@win2, modularityvalues32m4p4}], Thread[
          {Range@win2, modularityvalues32m1p1}], Thread[{Range@win2, modularityvalues32m2m4}],
         Thread[{Range@win2, modularityvalues32p2p4}]};

In[ ]:= singlerandommodularityvalues12 =
         {Thread[{Range@win2, singlerandomerdrenmodularityvalues12m4p4}],
          Thread[{Range@win2, singlerandomcommmodularityvalues12m4p4}],
          Thread[{Range@win2, singlerandomerdrenmodularityvalues12m1p1}],
          Thread[{Range@win2, singlerandomcommmodularityvalues12m1p1}],
          Thread[{Range@win2, singlerandomerdrenmodularityvalues12m2m4}],
          Thread[{Range@win2, singlerandomcommmodularityvalues12m2m4}],
          Thread[{Range@win2, singlerandomerdrenmodularityvalues12p2p4}],
          Thread[{Range@win2, singlerandomcommmodularityvalues12p2p4}]};
        singlerandommodularityvalues32 =
         {Thread[{Range@win2, singlerandomerdrenmodularityvalues32m4p4}],
          Thread[{Range@win2, singlerandomcommmodularityvalues32m4p4}],
          Thread[{Range@win2, singlerandomerdrenmodularityvalues32m1p1}],
          Thread[{Range@win2, singlerandomcommmodularityvalues32m1p1}],
          Thread[{Range@win2, singlerandomerdrenmodularityvalues32m2m4}],
          Thread[{Range@win2, singlerandomcommmodularityvalues32m2m4}],
          Thread[{Range@win2, singlerandomerdrenmodularityvalues32p2p4}],
          Thread[{Range@win2, singlerandomcommmodularityvalues32p2p4}]};

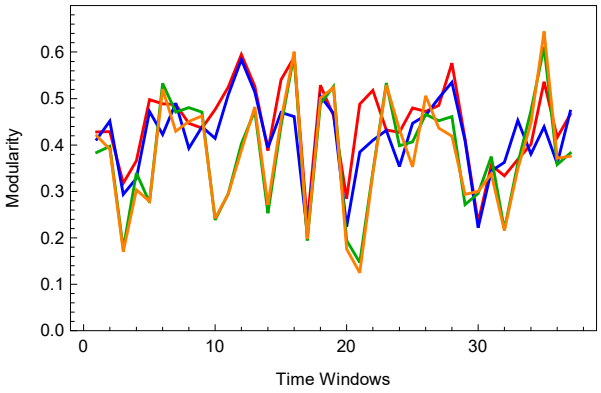
In[ ]:= zscores12 = {Thread[{Range@win2, zscores12m4p4[[All, 1]]}],
          Thread[{Range@win2, zscores12m4p4[[All, 2]]}],
          Thread[{Range@win2, zscores12m1p1[[All, 1]]}],
          Thread[{Range@win2, zscores12m1p1[[All, 2]]}],
          Thread[{Range@win2, zscores12m2m4[[All, 1]]}],
          Thread[{Range@win2, zscores12m2m4[[All, 2]]}],
          Thread[{Range@win2, zscores12p2p4[[All, 1]]}],
          Thread[{Range@win2, zscores12p2p4[[All, 2]]}]};
        zscores32 = {Thread[{Range@win2, zscores32m4p4[[All, 1]]}],
          Thread[{Range@win2, zscores32m4p4[[All, 2]]}],
          Thread[{Range@win2, zscores32m1p1[[All, 1]]}],
          Thread[{Range@win2, zscores32m1p1[[All, 2]]}],
          Thread[{Range@win2, zscores32m2m4[[All, 1]]}],
          Thread[{Range@win2, zscores32m2m4[[All, 2]]}],
          Thread[{Range@win2, zscores32p2p4[[All, 1]]}],
          Thread[{Range@win2, zscores32p2p4[[All, 2]]}]};
```

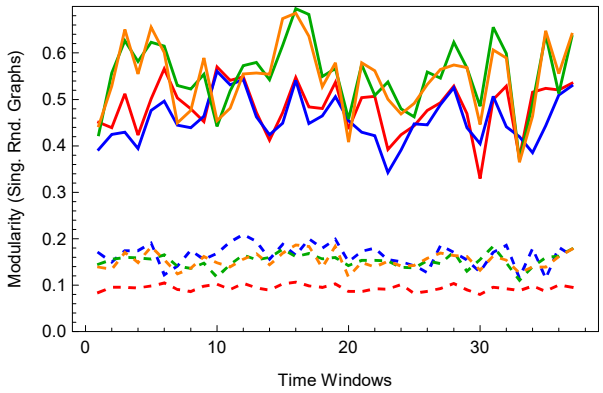
In[ ]:=
```
padding = 38;
modularityplotrange = {0, 0.7};
Row[{
  Column[{ListLinePlot[modularityvalues12, Frame → True,
     ImagePadding → padding, FrameTicks → {{All, None}, {All, None}},
     FrameLabel → {{"Modularity", None}, {"Time Windows", None}},
     PlotStyle → {Red, Blue, Darker@Green, Orange}, ImageSize → 350,
     PlotRange → {{-1, win2 + 2}, modularityplotrange}], ListLinePlot[modularityvalues32,
     Frame → True, ImagePadding → padding, FrameTicks → {{All, None}, {All, None}},
     FrameLabel → {{"Modularity", None}, {"Time Windows", None}},
     PlotStyle → {Red, Blue, Darker@Green, Orange}, ImageSize → 350,
     PlotRange → {{-1, win2 + 2}, modularityplotrange}]}],
  Column[{ListLinePlot[singlerandommodularityvalues12, Frame → True,
     ImagePadding → padding, FrameTicks → {{All, None}, {All, None}},
     FrameLabel → {{"Modularity (Sing. Rnd. Graphs)", None}, {"Time Windows", None}},
     PlotStyle → {{Dashed, Red}, Red, {Dashed, Blue}, Blue,
       {Dashed, Darker@Green}, Darker@Green, {Dashed, Orange}, Orange},
     ImageSize → 350, PlotRange → {{-1, win2 + 2}, modularityplotrange}],
    ListLinePlot[singlerandommodularityvalues32, Frame → True,
     ImagePadding → padding, FrameTicks → {{All, None}, {All, None}},
     FrameLabel → {{"Modularity (Sing. Rnd. Graphs)", None}, {"Time Windows", None}},
     PlotStyle → {{Dashed, Red}, Red, {Dashed, Blue}, Blue,
       {Dashed, Darker@Green}, Darker@Green, {Dashed, Orange}, Orange},
     ImageSize → 350, PlotRange → {{-1, win2 + 2}, modularityplotrange}]}],
  Column[{ListLinePlot[zscores12, Frame → True, ImagePadding → padding,
     FrameTicks → {{All, None}, {All, None}},
     FrameLabel → {{"Z-Scores", None}, {"Time Windows", None}}, PlotStyle →
      {{Dashed, Red}, Red, {Dashed, Blue}, Blue, {Dashed, Darker@Green}, Darker@Green,
       {Dashed, Orange}, Orange}, ImageSize → 350, PlotRange → {{-1, win2 + 2}, MinMax[
        Flatten[{zscores12m1p1, zscores12m2m4, zscores12m4p4, zscores12p2p4}], 1]}],
    ListLinePlot[zscores32, Frame → True, ImagePadding → padding,
     FrameTicks → {{All, None}, {All, None}},
     FrameLabel → {{"Z-Scores", None}, {"Time Windows", None}}, PlotStyle →
      {{Dashed, Red}, Red, {Dashed, Blue}, Blue, {Dashed, Darker@Green}, Darker@Green,
       {Dashed, Orange}, Orange}, ImageSize → 350, PlotRange → {{-1, win2 + 2}, MinMax[
        Flatten[{zscores32m1p1, zscores32m2m4, zscores32m4p4, zscores32p2p4}], 1]}]}]
  , Column[{LineLegend[{Darker@Green, Blue, Orange, Red}, {"[-4,-2]", "[-1,1]",
      "[2,4]", "[-4,4]"}, LegendLayout → "Column", LegendFunction → "Frame", LegendLabel →
      "Objective Function\nCoefficient Intervals", LegendMarkerSize → {20, 20}],
    LineLegend[{Dashed, Black}, {"Degrees Fixed\nNull Model", "Modularity\nNull Model"},
     LegendLayout → "Column", LegendFunction → "Frame", LegendMarkerSize → {20, 20}]}]}]
```

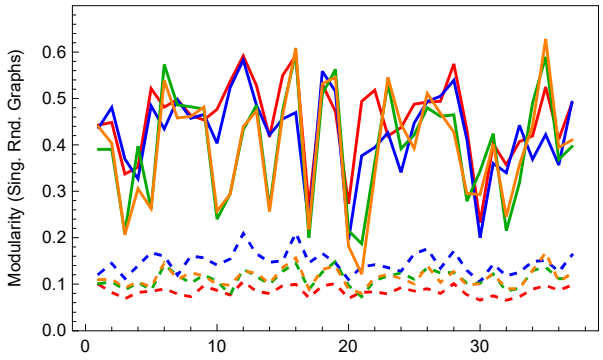


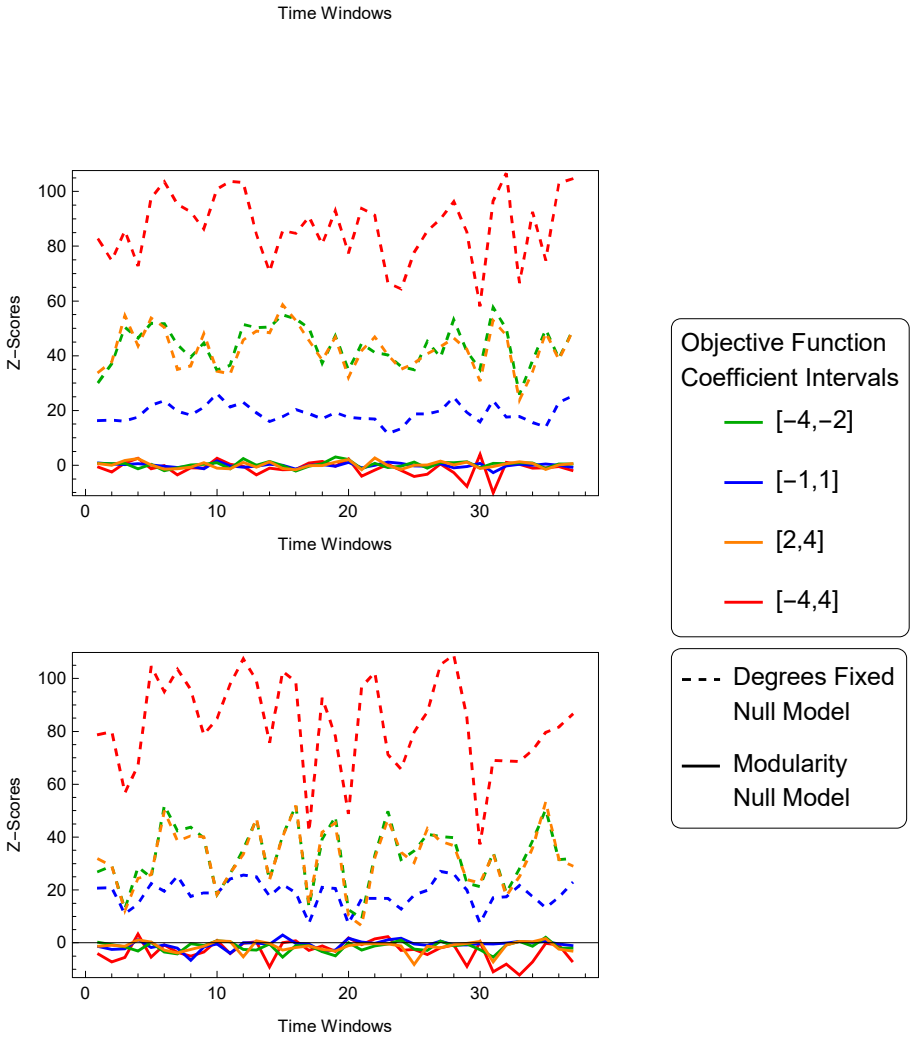

Modularity
0.0
0.1
0.2
0.3
0.4
0
10
20
30
Time Windows

Out[ ]=


Modularity
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0
10
20
30
Time Windows

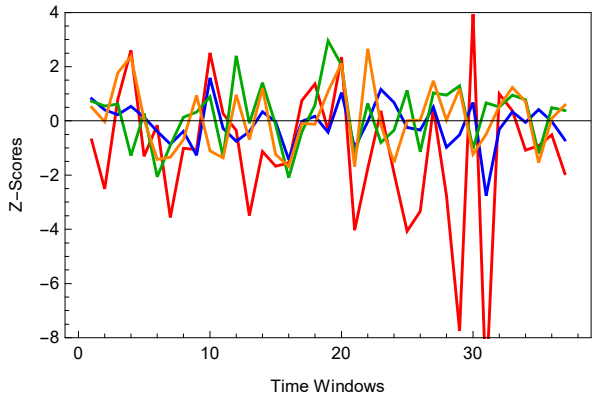

Modularity (Sing. Rnd. Graphs)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0
10
20
30
Time Windows

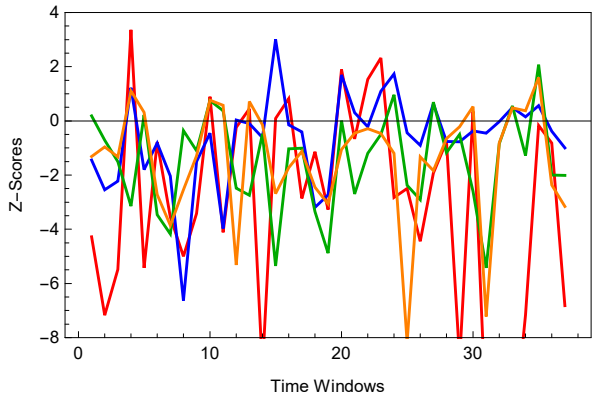

Modularity (Sing. Rnd. Graphs)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0
10
20
30




```
In[ ]:= Column[{ListLinePlot[zscores12, Frame → True,
      ImagePadding → padding, FrameTicks → {{All, None}, {All, None}},
      FrameLabel → {{"Z-Scores", None}, {"Time Windows", None}},
      PlotStyle → {{Dashed, Red}, Red, {Dashed, Blue}, Blue, {Dashed, Darker@Green},
        Darker@Green, {Dashed, Orange}, Orange}, ImageSize → 350,
      PlotRange → {{-1, win2 + 2}, {-8, 4}}], ListLinePlot[zscores32, Frame → True,
      ImagePadding → padding, FrameTicks → {{All, None}, {All, None}},
      FrameLabel → {{"Z-Scores", None}, {"Time Windows", None}},
      PlotStyle → {{Dashed, Red}, Red, {Dashed, Blue}, Blue,
        {Dashed, Darker@Green}, Darker@Green, {Dashed, Orange}, Orange},
      ImageSize → 350, PlotRange → {{-1, win2 + 2}, {-8, 4}}]}]
```

Out[ ]=





Data Import_Fixed Objective Function Coefficients

In[ ]:=

```
modularityvalues12m4p4 =
  Import["plot_values/boundaries_(-0.5,0.5)-modularityvalues-fss.mx"];
modularityvalues12m1p1 = Import[
   "plot_values/boundaries_(-50,50)-modularityvalues-fss.mx"];
modularityvalues12m2m4 = Import[
   "plot_values/boundariesdouble_(-0.5,0.5)-modularityvalues-fss.mx"];
modularityvalues12p2p4 = Import[
   "plot_values/boundariesdouble_(-50,50)-modularityvalues-fss.mx"];

modularityvalues32m4p4 =
  Import["plot_values/boundaries_(-0.5,0.5)-modularityvalues-fbs.mx"];
modularityvalues32m1p1 = Import[
   "plot_values/boundaries_(-50,50)-modularityvalues-fbs.mx"];
modularityvalues32m2m4 = Import[
   "plot_values/boundariesdouble_(-0.5,0.5)-modularityvalues-fbs.mx"];
modularityvalues32p2p4 = Import[
   "plot_values/boundariesdouble_(-50,50)-modularityvalues-fbs.mx"];
```

In[ ]:=
```
singlerandomerdrenmodularityvalues12m4p4 =
  Import["plot_values/boundaries_(-0.5,0.5)-singrand-erd-modularityvalues-fss.mx"];
singlerandomcommmodularityvalues12m4p4 =
  Import["plot_values/boundaries_(-0.5,0.5)-singrand-comm-modularityvalues-fss.mx"];
singlerandomerdrenmodularityvalues12m1p1 =
  Import["plot_values/boundaries_(-50,50)-singrand-erd-modularityvalues-fss.mx"];
singlerandomcommmodularityvalues12m1p1 =
  Import["plot_values/boundaries_(-50,50)-singrand-comm-modularityvalues-fss.mx"];
singlerandomerdrenmodularityvalues12m2m4 = Import[
   "plot_values/boundariesdouble_(-0.5,0.5)-singrand-erd-modularityvalues-fss.mx"];
singlerandomcommmodularityvalues12m2m4 = Import[
   "plot_values/boundariesdouble_(-0.5,0.5)-singrand-comm-modularityvalues-fss.mx"];
singlerandomerdrenmodularityvalues12p2p4 =
  Import["plot_values/boundariesdouble_(-50,50)-singrand-erd-modularityvalues-fss.mx"];
singlerandomcommmodularityvalues12p2p4 = Import[
   "plot_values/boundariesdouble_(-50,50)-singrand-comm-modularityvalues-fss.mx"];

singlerandomerdrenmodularityvalues32m4p4 =
  Import["plot_values/boundaries_(-0.5,0.5)-singrand-erd-modularityvalues-fbs.mx"];
singlerandomcommmodularityvalues32m4p4 =
  Import["plot_values/boundaries_(-0.5,0.5)-singrand-comm-modularityvalues-fbs.mx"];
singlerandomerdrenmodularityvalues32m1p1 =
  Import["plot_values/boundaries_(-50,50)-singrand-erd-modularityvalues-fbs.mx"];
singlerandomcommmodularityvalues32m1p1 =
  Import["plot_values/boundaries_(-50,50)-singrand-comm-modularityvalues-fbs.mx"];
singlerandomerdrenmodularityvalues32m2m4 = Import[
   "plot_values/boundariesdouble_(-0.5,0.5)-singrand-erd-modularityvalues-fbs.mx"];
singlerandomcommmodularityvalues32m2m4 = Import[
   "plot_values/boundariesdouble_(-0.5,0.5)-singrand-comm-modularityvalues-fbs.mx"];
singlerandomerdrenmodularityvalues32p2p4 =
  Import["plot_values/boundariesdouble_(-50,50)-singrand-erd-modularityvalues-fbs.mx"];
singlerandomcommmodularityvalues32p2p4 =
  Import["plot_values/boundariesdouble_(-50,50)-singrand-comm-modularityvalues-fbs.mx"];
```

In[ ]:=
```
zscores12m4p4 = Import["plot_values/boundaries_(-0.5,0.5)-zscores-fss.mx"];
zscores12m1p1 = Import["plot_values/boundaries_(-50,50)-zscores-fss.mx"];
zscores12m2m4 = Import["plot_values/boundariesdouble_(-0.5,0.5)-zscores-fss.mx"];
zscores12p2p4 = Import["plot_values/boundariesdouble_(-50,50)-zscores-fss.mx"];

zscores32m4p4 = Import["plot_values/boundaries_(-0.5,0.5)-zscores-fbs.mx"];
zscores32m1p1 = Import["plot_values/boundaries_(-50,50)-zscores-fbs.mx"];
zscores32m2m4 = Import["plot_values/boundariesdouble_(-0.5,0.5)-zscores-fbs.mx"];
zscores32p2p4 = Import["plot_values/boundariesdouble_(-50,50)-zscores-fbs.mx"];
```

In[ ]:=
```
win2 = 37;
```

```
In[ ]:= modularityvalues12 = {Thread[{Range@win2, modularityvalues12m4p4}], Thread[
          {Range@win2, modularityvalues12m1p1}], Thread[{Range@win2, modularityvalues12m2m4}],
         Thread[{Range@win2, modularityvalues12p2p4}]};
        modularityvalues32 = {Thread[{Range@win2, modularityvalues32m4p4}], Thread[
          {Range@win2, modularityvalues32m1p1}], Thread[{Range@win2, modularityvalues32m2m4}],
         Thread[{Range@win2, modularityvalues32p2p4}]};

In[ ]:= singlerandommodularityvalues12 =
         {Thread[{Range@win2, singlerandomerdrenmodularityvalues12m4p4}],
          Thread[{Range@win2, singlerandomcommmodularityvalues12m4p4}],
          Thread[{Range@win2, singlerandomerdrenmodularityvalues12m1p1}],
          Thread[{Range@win2, singlerandomcommmodularityvalues12m1p1}],
          Thread[{Range@win2, singlerandomerdrenmodularityvalues12m2m4}],
          Thread[{Range@win2, singlerandomcommmodularityvalues12m2m4}],
          Thread[{Range@win2, singlerandomerdrenmodularityvalues12p2p4}],
          Thread[{Range@win2, singlerandomcommmodularityvalues12p2p4}]};
        singlerandommodularityvalues32 =
         {Thread[{Range@win2, singlerandomerdrenmodularityvalues32m4p4}],
          Thread[{Range@win2, singlerandomcommmodularityvalues32m4p4}],
          Thread[{Range@win2, singlerandomerdrenmodularityvalues32m1p1}],
          Thread[{Range@win2, singlerandomcommmodularityvalues32m1p1}],
          Thread[{Range@win2, singlerandomerdrenmodularityvalues32m2m4}],
          Thread[{Range@win2, singlerandomcommmodularityvalues32m2m4}],
          Thread[{Range@win2, singlerandomerdrenmodularityvalues32p2p4}],
          Thread[{Range@win2, singlerandomcommmodularityvalues32p2p4}]};

In[ ]:= zscores12 = {Thread[{Range@win2, zscores12m4p4[[All, 1]]}],
          Thread[{Range@win2, zscores12m4p4[[All, 2]]}],
          Thread[{Range@win2, zscores12m1p1[[All, 1]]}],
          Thread[{Range@win2, zscores12m1p1[[All, 2]]}],
          Thread[{Range@win2, zscores12m2m4[[All, 1]]}],
          Thread[{Range@win2, zscores12m2m4[[All, 2]]}],
          Thread[{Range@win2, zscores12p2p4[[All, 1]]}],
          Thread[{Range@win2, zscores12p2p4[[All, 2]]}]};
        zscores32 = {Thread[{Range@win2, zscores32m4p4[[All, 1]]}],
          Thread[{Range@win2, zscores32m4p4[[All, 2]]}],
          Thread[{Range@win2, zscores32m1p1[[All, 1]]}],
          Thread[{Range@win2, zscores32m1p1[[All, 2]]}],
          Thread[{Range@win2, zscores32m2m4[[All, 1]]}],
          Thread[{Range@win2, zscores32m2m4[[All, 2]]}],
          Thread[{Range@win2, zscores32p2p4[[All, 1]]}],
          Thread[{Range@win2, zscores32p2p4[[All, 2]]}]};
```

In[ ]:=
```
padding = 38;
modularityplotrange = {0.09, 0.7};
Row[{
  Column[{ListLinePlot[modularityvalues12, Frame → True,
     ImagePadding → padding, FrameTicks → {{All, None}, {All, None}},
     FrameLabel → {{"Modularity", None}, {"Time Windows", None}},
     PlotStyle → {Red, Blue, Darker@Green, Orange}, ImageSize → 350,
     PlotRange → {{-1, win2 + 2}, modularityplotrange}], ListLinePlot[modularityvalues32,
     Frame → True, ImagePadding → padding, FrameTicks → {{All, None}, {All, None}},
     FrameLabel → {{"Modularity", None}, {"Time Windows", None}},
     PlotStyle → {Red, Blue, Darker@Green, Orange}, ImageSize → 350,
     PlotRange → {{-1, win2 + 2}, modularityplotrange}]}],
  Column[{ListLinePlot[singlerandommodularityvalues12, Frame → True,
     ImagePadding → padding, FrameTicks → {{All, None}, {All, None}},
     FrameLabel → {{"Modularity (Sing. Rnd. Graphs)", None}, {"Time Windows", None}},
     PlotStyle → {{Dashed, Red}, Red, {Dashed, Blue}, Blue,
       {Dashed, Darker@Green}, Darker@Green, {Dashed, Orange}, Orange},
     ImageSize → 350, PlotRange → {{-1, win2 + 2}, modularityplotrange}],
    ListLinePlot[singlerandommodularityvalues32, Frame → True,
     ImagePadding → padding, FrameTicks → {{All, None}, {All, None}},
     FrameLabel → {{"Modularity (Sing. Rnd. Graphs)", None}, {"Time Windows", None}},
     PlotStyle → {{Dashed, Red}, Red, {Dashed, Blue}, Blue,
       {Dashed, Darker@Green}, Darker@Green, {Dashed, Orange}, Orange},
     ImageSize → 350, PlotRange → {{-1, win2 + 2}, modularityplotrange}]}],
  Column[{ListLinePlot[zscores12, Frame → True, ImagePadding → padding,
     FrameTicks → {{All, None}, {All, None}},
     FrameLabel → {{"Z-Scores", None}, {"Time Windows", None}}, PlotStyle →
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       {Dashed, Orange}, Orange}, ImageSize → 350, PlotRange → {{-1, win2 + 2}, MinMax[
        Flatten[{zscores12m1p1, zscores12m2m4, zscores12m4p4, zscores12p2p4}], 1]}],
    ListLinePlot[zscores32, Frame → True, ImagePadding → padding,
     FrameTicks → {{All, None}, {All, None}},
     FrameLabel → {{"Z-Scores", None}, {"Time Windows", None}}, PlotStyle →
      {{Dashed, Red}, Red, {Dashed, Blue}, Blue, {Dashed, Darker@Green}, Darker@Green,
       {Dashed, Orange}, Orange}, ImageSize → 350, PlotRange → {{-1, win2 + 2}, MinMax[
        Flatten[{zscores32m1p1, zscores32m2m4, zscores32m4p4, zscores32p2p4}], 1]}]}]
  , Column[{LineLegend[{Red, Darker@Green, Blue, Orange}, {"[-0.5,0.5] -> 105pcs",
      "[-0.5,0.5] -> 210pcs", "[-50,50] -> 105pcs", "[-50,50] -> 210pcs"},
     LegendLayout → "Column", LegendFunction → "Frame",
     LegendLabel → "Constrained\nBound Intervals", LegendMarkerSize → {20, 20}],
    LineLegend[{Dashed, Black}, {"Degrees Fixed\nNull Model", "Modularity\nNull Model"},
     LegendLayout → "Column", LegendFunction → "Frame", LegendMarkerSize → {20, 20}]}]}]
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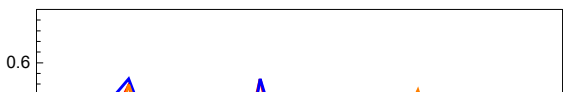
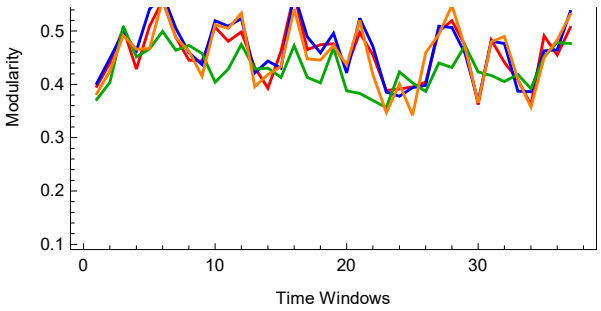
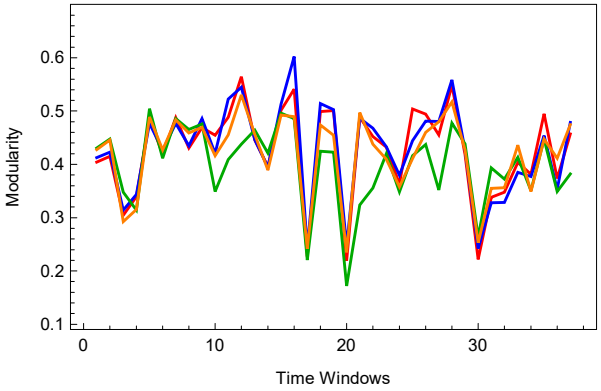
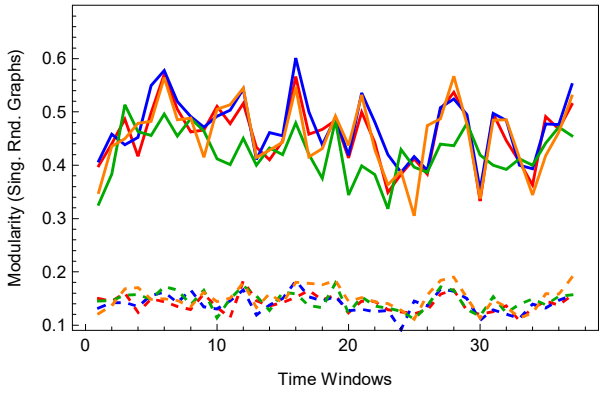
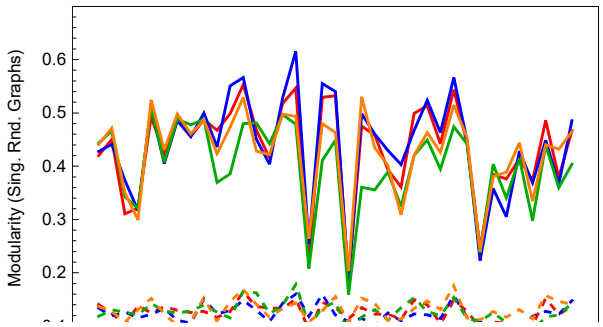


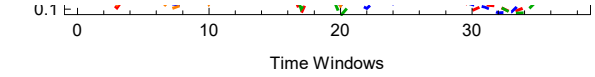

Modularity
0.5
0.4
0.3
0.2
0.1
0
10
20
30
Time Windows

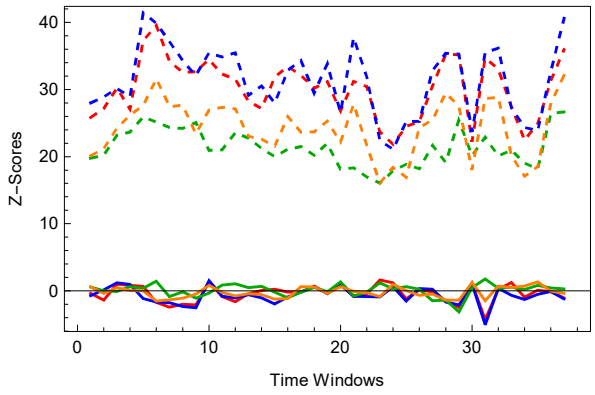
Out[ ]=

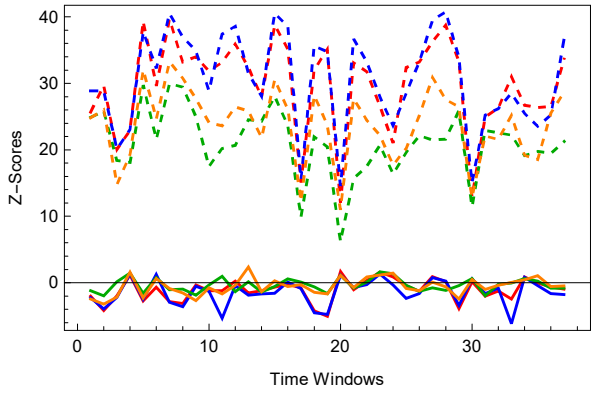

Modularity
0.6
0.5
0.4
0.3
0.2
0.1
0
10
20
30
Time Windows

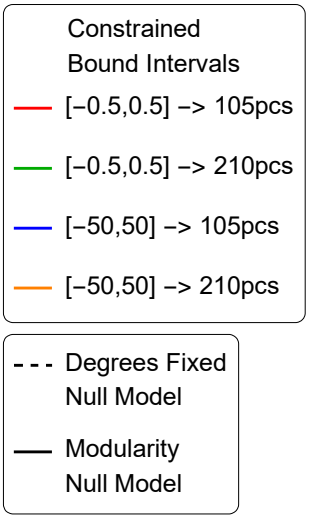

Modularity (Sing. Rnd. Graphs)
0.6
0.5
0.4
0.3
0.2
0.1
0
10
20
30
Time Windows


Modularity (Sing. Rnd. Graphs)
0.6
0.5
0.4
0.3
0.2









In[ ]:=
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    FrameLabel → {{"Z-Scores", None}, {"Time Windows", None}},
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      Darker@Green, {Dashed, Orange}, Orange}, ImageSize → 350,
    PlotRange → {{-1, win2 + 2}, {-5.5, 2.5}}], ListLinePlot[zscores32,
    Frame → True, ImagePadding → padding, FrameTicks → {{All, None}, {All, None}},
    FrameLabel → {{"Z-Scores", None}, {"Time Windows", None}},
    PlotStyle → {{Dashed, Red}, Red, {Dashed, Blue}, Blue,
      {Dashed, Darker@Green}, Darker@Green, {Dashed, Orange}, Orange},
    ImageSize → 350, PlotRange → {{-1, win2 + 2}, {-5.5, 2.5}}]}]
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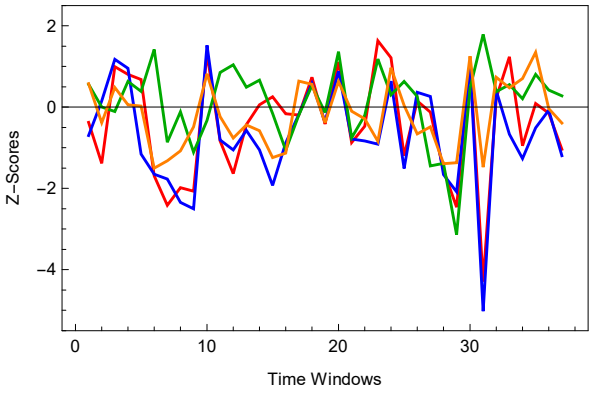
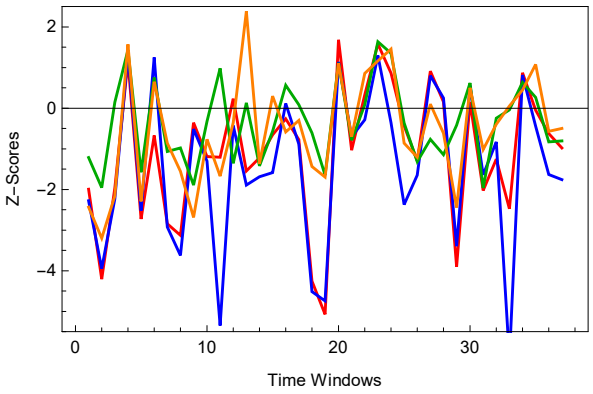

2
0
−2
−4
Z−Scores
0
10
20
30
Time Windows

Out[ ]=


2
0
−2
−4
Z−Scores
0
10
20
30
Time Windows