```
In[ ]:= v1Color = RGBColor["#ff1f5b"];

In[ ]:= lpColor = RGBColor["#009ade"];

In[ ]:= lmColor = RGBColor["#f28522"];

(********************************)

dateMouseSessionListV1toV2m = {{"082120", "Mouse21060", "Session2"},
    {"082220", "Mouse21060", "Session3"}, {"082320", "Mouse21060", "Session2"},
    {"082520", "Mouse21060", "Session2"}, {"090620", "Mouse21060", "Session1"},
    {"090820", "Mouse21067", "Session2"}, {"101720", "Mouse23392", "Session1"},
    {"101520", "Mouse23393", "Session2"}, {"101420", "Mouse23395", "Session2"},
    {"121020", "Mouse23379", "Session1"}, {"121520", "Mouse23365", "Session2"},
    {"122020", "Mouse23365", "Session1"}, {"121520", "Mouse23379", "Session2"},
    {"121920", "Mouse23379", "Session1"}, {"020421", "Mouse23320", "Session1"},
    {"020421", "Mouse23329", "Session1"}, {"022721", "Mouse23329", "Session1"},
    {"030621", "Mouse23329", "Session1"}, {"071721", "Mouse21108", "Session1"}};

dateMouseSessionListLPtoV2m = {{"102020", "Mouse23394", "Session2"},
    {"102320", "Mouse23394", "Session1"}, {"100720", "Mouse23399", "Session2"},
    {"101020", "Mouse23399", "Session2"}, {"110120", "Mouse23394", "Session2"},
    {"103120", "Mouse23378", "Session2"}, {"110320", "Mouse23378", "Session1"},
    {"110120", "Mouse23377", "Session1"}, {"111620", "Mouse23384", "Session1"},
    {"111720", "Mouse23384", "Session3"}, {"112020", "Mouse23384", "Session2"},
    {"120420", "Mouse23378", "Session1"}, {"120220", "Mouse23378", "Session2"},
    {"120420", "Mouse23384", "Session1"}, {"120220", "Mouse23384", "Session2"},
    {"121620", "Mouse23381", "Session2"}, {"121920", "Mouse23381", "Session1"},
    {"011221", "Mouse23369", "Session1"}, {"011521", "Mouse23369", "Session2"},
    {"010721", "Mouse23339", "Session1"}, {"011521", "Mouse23339", "Session1"},
    {"030921", "Mouse23339", "Session1"}, {"031121", "Mouse23369", "Session1"},
    {"070122", "Mouse23067", "Session1"}, {"071122", "Mouse23075", "Session1"}};

dateMouseSessionListLMtoV2m = {{"092221", "Mouse22422", "Session1"},
    {"100421", "Mouse22422", "Session1"}, {"081221", "Mouse22437", "Session2"},
    {"081521", "Mouse22437", "Session1"}, {"082021", "Mouse22437", "Session1"},
    {"082421", "Mouse22437", "Session1"}, {"092321", "Mouse22472", "Session1"},
    {"101021", "Mouse22472", "Session1"}, {"081921", "Mouse22491", "Session1"},
    {"102021", "Mouse22422", "Session1"}, {"102121", "Mouse22436", "Session1"},
    {"102221", "Mouse22472", "Session1"}, {"071522", "Mouse23025", "Session1"},
    {"071222", "Mouse23100", "Session2"}, {"071122", "Mouse23014", "Session1"},
    {"070822", "Mouse22518", "Session1"}, {"071022", "Mouse22518", "Session1"}};

In[ ]:= (***Preferred spatial frequency***)

In[ ]:= prefSFsV1toV2m = Flatten[ToExpression /@ Import[
        "F:/FigureGeneration/FigureS2/FigureS2Data/Axons/V1toV2m/ValuesForPlotting/
          prefSFs_V1toV2m_nonDupROIs.txt", "List"]];

In[ ]:= prefSFsLPtoV2m = Flatten[ToExpression /@ Import[
        "F:/FigureGeneration/FigureS2/FigureS2Data/Axons/LPtoV2m/ValuesForPlotting/
          prefSFs_LPtoV2m_nonDupROIs.txt", "List"]];
```

```
In[ ]:= prefSFsLMtoV2m = Flatten[ToExpression /@ Import[
          "F:/FigureGeneration/FigureS2/FigureS2Data/Axons/LMtoV2m/ValuesForPlotting/
            prefSFs_LMtoV2m_nonDupROIs.txt", "List"]];

In[ ]:= v1AxonCharts = Show[ListLogPlot[
          Partition[Riffle[Table[RandomReal[{0.55, 0.85}], {Length[prefSFsV1toV2m]}],
            prefSFsV1toV2m], 2], PlotStyle → Transparent,
         PlotMarkers → Graphics[{Transparent, Circle[]}, ImageSize → 5.5],
         PlotRange → {{-0.63, 2}, {0.01, 0.33}}, Axes → False],
        BoxWhiskerChart[prefSFsV1toV2m, {{"Whiskers", Directive[Darker@v1Color, Thick]},
          {"Fences", Directive[Darker@v1Color, Thick]},
          {"MedianMarker", Directive[Darker@v1Color, Thickness[0.009]]}},
         ChartStyle → Directive[v1Color, Opacity[0.3]], Frame → False,
         ScalingFunctions → "Log"], DistributionChart[prefSFsV1toV2m,
         ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], v1Color],
         Frame → False, ScalingFunctions → "Log"], FrameTicks →
         {{LinTicks[0.01, 0.34, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None},
          {None, None}}, Axes → False, TicksStyle → Thick,
        FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
        FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];

In[ ]:= lmAxonCharts = Show[ListLogPlot[
          Partition[Riffle[Table[RandomReal[{0.55, 0.85}], {Length[prefSFsLMtoV2m]}],
            prefSFsLMtoV2m], 2], PlotStyle → Transparent,
         PlotMarkers → Graphics[{Transparent, Circle[]}, ImageSize → 5.5],
         PlotRange → {{-0.63, 2}, {0.01, 0.33}}, Axes → False],
        BoxWhiskerChart[prefSFsLMtoV2m, {{"Whiskers", Directive[Darker@lmColor, Thick]},
          {"Fences", Directive[Darker@lmColor, Thick]},
          {"MedianMarker", Directive[Darker@lmColor, Thickness[0.009]]}},
         ChartStyle → Directive[lmColor, Opacity[0.3]], Frame → False,
         ScalingFunctions → "Log"], DistributionChart[prefSFsLMtoV2m,
         ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], lmColor],
         Frame → False, ScalingFunctions → "Log"], FrameTicks →
         {{LinTicks[0.01, 0.34, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None},
          {None, None}}, Axes → False, TicksStyle → Thick,
        FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
        FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];
```
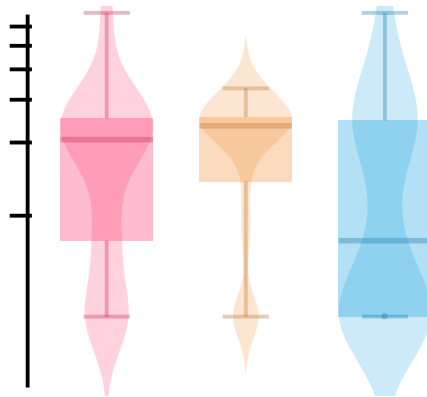
```
In[ ]:= lpAxonCharts = Show[ListLogPlot[
         Partition[Riffle[Table[RandomReal[{0.55, 0.85}], {Length[prefSFsLPtoV2m]}],
           prefSFsLPtoV2m], 2], PlotStyle → Transparent,
         PlotMarkers → Graphics[{Transparent, Circle[]}, ImageSize → 5.5],
         PlotRange → {{-0.63, 2}, {0.01, 0.33}}, Axes → False],
        BoxWhiskerChart[prefSFsLPtoV2m, {{"Whiskers", Directive[Darker@lpColor, Thick]},
          {"Fences", Directive[Darker@lpColor, Thick]},
          {"MedianMarker", Directive[Darker@lpColor, Thickness[0.009]]}},
         ChartStyle → Directive[lpColor, Opacity[0.3]], Frame → False,
         ScalingFunctions → "Log"], DistributionChart[prefSFsLPtoV2m,
         ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], lpColor],
         Frame → False, ScalingFunctions → "Log"], FrameTicks →
         {{LinTicks[0.01, 0.34, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None},
          {None, None}}, Axes → False, TicksStyle → Thick,
        FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
        FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];

In[ ]:= transp = Show[ListLogPlot[
         Partition[Riffle[Table[RandomReal[{0.55, 0.85}], {Length[prefSFsLPtoV2m]}],
           prefSFsLPtoV2m], 2], PlotStyle → Transparent,
         PlotMarkers → Graphics[{Transparent, Circle[]}, ImageSize → 5.5],
         PlotRange → {{-0.63, 2}, {0.01, 0.33}}, FrameTicks →
         {{LinTicks[0.01, 0.34, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None},
          {None, None}}, Axes → False, TicksStyle → Thick,
        FrameStyle → Directive[Black, Thick], Frame → {{True, None}, {None, None}},
        FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]],
        BoxWhiskerChart[prefSFsLPtoV2m, {{"Whiskers", Directive[Transparent, Thick]},
          {"Fences", Directive[Transparent, Thick]},
          {"MedianMarker", Directive[Transparent, Thickness[0.009]]}},
         ChartStyle → Transparent, Frame → False, ScalingFunctions → "Log"],
        DistributionChart[prefSFsLPtoV2m,
         ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], Transparent],
         Frame → False, ScalingFunctions → "Log"]];

In[ ]:= GraphicsRow[{v1AxonCharts, lmAxonCharts, lpAxonCharts, transp},
        Spacings → {{-280, -280, -280, -400}}]
```



```
In[ ]:= (***Preferred speed***)
```

```
In[ ]:= prefSpeedsV1toV2m = Flatten[ToExpression /@ Import[
          "F:/FigureGeneration/FigureS2/FigureS2Data/Axons/V1toV2m/ValuesForPlotting/
            prefSpeeds_V1toV2m_nonDupROIs.txt", "List"]];
```

```
In[ ]:= prefSpeedsLPtoV2m = Flatten[ToExpression /@ Import[
          "F:/FigureGeneration/FigureS2/FigureS2Data/Axons/LPtoV2m/ValuesForPlotting/
            prefSpeeds_LPtoV2m_nonDupROIs.txt", "List"]];
```

```
In[ ]:= prefSpeedsLMtoV2m = Flatten[ToExpression /@ Import[
          "F:/FigureGeneration/FigureS2/FigureS2Data/Axons/LMtoV2m/ValuesForPlotting/
            prefSpeeds_LMtoV2m_nonDupROIs.txt", "List"]];
```

```
In[ ]:= v1AxonCharts = Show[ListLogPlot[
          Partition[Riffle[Table[RandomReal[{0.55, 0.85}], {Length[prefSpeedsV1toV2m]}],
            prefSpeedsV1toV2m], 2], PlotStyle → Transparent,
         PlotMarkers → Graphics[{Transparent, Circle[]}, ImageSize → 5.5],
         PlotRange → {{-0.63, 2}, {0, 1500}}, Axes → False],
        BoxWhiskerChart[prefSpeedsV1toV2m, {{"Whiskers", Directive[Darker@v1Color, Thick]},
          {"Fences", Directive[Darker@v1Color, Thick]},
          {"MedianMarker", Directive[Darker@v1Color, Thickness[0.009]]}},
         ChartStyle → Directive[v1Color, Opacity[0.3]], Frame → False,
         ScalingFunctions → "Log"], DistributionChart[prefSpeedsV1toV2m,
         ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], v1Color],
         Frame → False, ScalingFunctions → "Log"], FrameTicks →
         {{LinTicks[0, 1500, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None},
          {None, None}}, Axes → False, TicksStyle → Thick,
        FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
        FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];
```

```
In[ ]:= lmAxonCharts = Show[ListLogPlot[
          Partition[Riffle[Table[RandomReal[{0.55, 0.85}], {Length[prefSpeedsLMtoV2m]}],
            prefSpeedsLMtoV2m], 2], PlotStyle → Transparent,
         PlotMarkers → Graphics[{Transparent, Circle[]}, ImageSize → 5.5],
         PlotRange → {{-0.63, 2}, {0, 1500}}, Axes → False],
        BoxWhiskerChart[prefSpeedsLMtoV2m, {{"Whiskers", Directive[Darker@lmColor, Thick]},
          {"Fences", Directive[Darker@lmColor, Thick]},
          {"MedianMarker", Directive[Darker@lmColor, Thickness[0.009]]}},
         ChartStyle → Directive[lmColor, Opacity[0.3]], Frame → False,
         ScalingFunctions → "Log"], DistributionChart[prefSpeedsLMtoV2m,
         ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], lmColor],
         Frame → False, ScalingFunctions → "Log"], FrameTicks →
         {{LinTicks[0, 1500, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None},
          {None, None}}, Axes → False, TicksStyle → Thick,
        FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
        FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];
```

```
In[ ]:= lpAxonCharts = Show[ListLogPlot[
        Partition[Riffle[Table[RandomReal[{0.55, 0.85}], {Length[prefSpeedsLPtoV2m]}],
          prefSpeedsLPtoV2m], 2], PlotStyle → Transparent,
       PlotMarkers → Graphics[{Transparent, Circle[]}, ImageSize → 5.5],
       PlotRange → {{-0.63, 2}, {0, 1500}}, Axes → False],
      BoxWhiskerChart[prefSpeedsLPtoV2m, {{"Whiskers", Directive[Darker@lpColor, Thick]},
        {"Fences", Directive[Darker@lpColor, Thick]},
        {"MedianMarker", Directive[Darker@lpColor, Thickness[0.009]]}},
       ChartStyle → Directive[lpColor, Opacity[0.3]], Frame → False,
       ScalingFunctions → "Log"], DistributionChart[prefSpeedsLPtoV2m,
       ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], lpColor],
       Frame → False, ScalingFunctions → "Log"], FrameTicks →
       {{LinTicks[0, 1500, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None},
        {None, None}}, Axes → False, TicksStyle → Thick,
      FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
      FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];

In[ ]:= transp = Show[ListLogPlot[
        Partition[Riffle[Table[RandomReal[{0.55, 0.85}], {Length[prefSpeedsLPtoV2m]}],
          prefSpeedsLPtoV2m], 2], PlotStyle → Transparent,
       PlotMarkers → Graphics[{Transparent, Circle[]}, ImageSize → 5.5],
       PlotRange → {{-0.63, 2}, {0, 1500}}, FrameTicks →
        {{LinTicks[0, 1500, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None},
         {None, None}}, Axes → False, TicksStyle → Thick, FrameStyle → Directive[Black, Thick],
       Frame → {{True, None}, {None, None}}, FrameTicksStyle ->
        Directive[FontOpacity -> 0, FontSize -> 0]], ListLogPlot[Partition[
        Partition[Riffle[Table[-0.6, {Length[Range[5, 720, 55]]}], Range[5, 720, 55]], 2], 1],
       PlotStyle → Black, PlotRange → {{-0.63, 2}, {0, 1500}}, Axes → False],
      BoxWhiskerChart[prefSpeedsLPtoV2m, {{"Whiskers", Directive[Transparent, Thick]},
        {"Fences", Directive[Transparent, Thick]},
        {"MedianMarker", Directive[Transparent, Thickness[0.009]]}},
       ChartStyle → Transparent, Frame → False, ScalingFunctions → "Log"],
      DistributionChart[prefSpeedsLPtoV2m,
       ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], Transparent],
       Frame → False, ScalingFunctions → "Log"]];

In[ ]:= GraphicsRow[{v1AxonCharts, lmAxonCharts, lpAxonCharts, transp},
     Spacings → {{-280, -280, -280, -400}}]
```

Out[ ]=