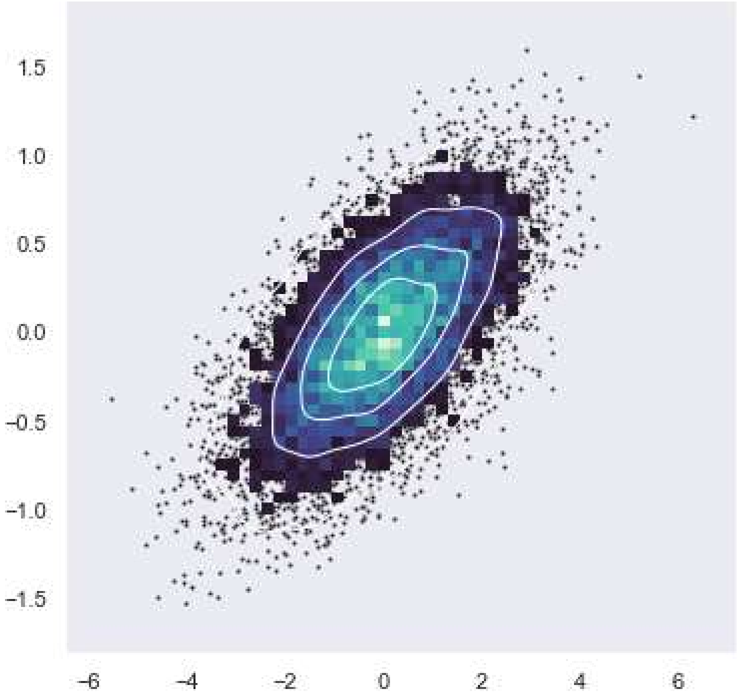
In [1]:

```
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
sns.set_theme(style="dark")

# Simulate data from a bivariate Gaussian
n = 10000
mean = [0, 0]
cov = [(2, .4), (.4, .2)]
rng = np.random.RandomState(0)
x, y = rng.multivariate_normal(mean, cov, n).T

# Draw a combo histogram and scatterplot with density contours
f, ax = plt.subplots(figsize=(6, 6))
sns.scatterplot(x=x, y=y, s=5, color=".15")
sns.histplot(x=x, y=y, bins=50, pthresh=.1, cmap="mako")
sns.kdeplot(x=x, y=y, levels=5, color="w", linewidths=1)
```

Out[1]:

```
<AxesSubplot:>
```



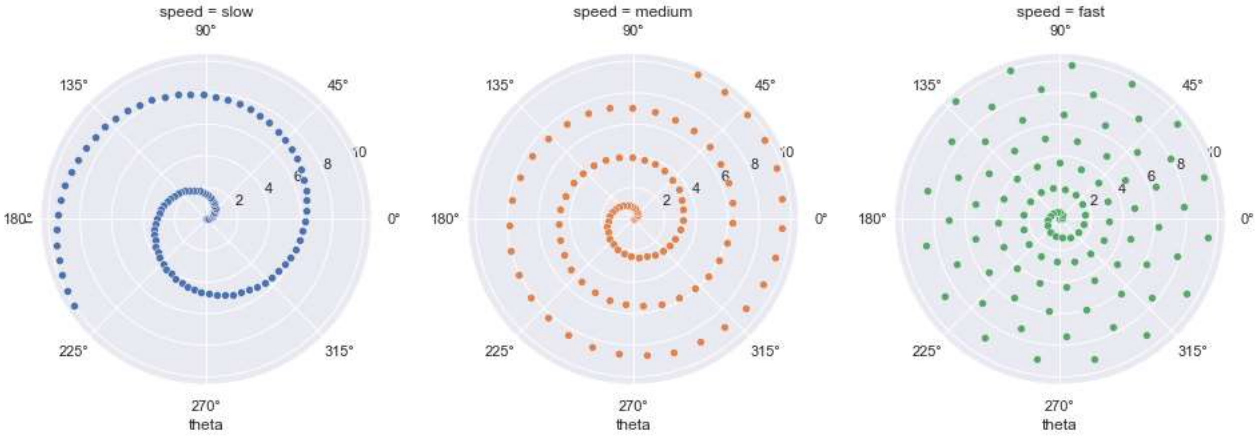
In [2]:

```
import numpy as np
import pandas as pd
import seaborn as sns

sns.set_theme()

# Generate an example radial datast
r = np.linspace(0, 10, num=100)
df = pd.DataFrame({'r': r, 'slow': r, 'medium': 2 * r, 'fast': 4 * r})

# Convert the dataframe to long-form or "tidy" format
df = pd.melt(df, id_vars=['r'], var_name='speed', value_name='theta')

# Set up a grid of axes with a polar projection
```

```
g = sns.FacetGrid(df, col="speed", hue="speed",
                  subplot_kws=dict(projection='polar'), height=4.5,
                  sharex=False, sharey=False, despine=False)

# Draw a scatterplot onto each axes in the grid
g.map(sns.scatterplot, "theta", "r")
```

Out[2]:

```
<seaborn.axisgrid.FacetGrid at 0x2a0d3c370a0>
```

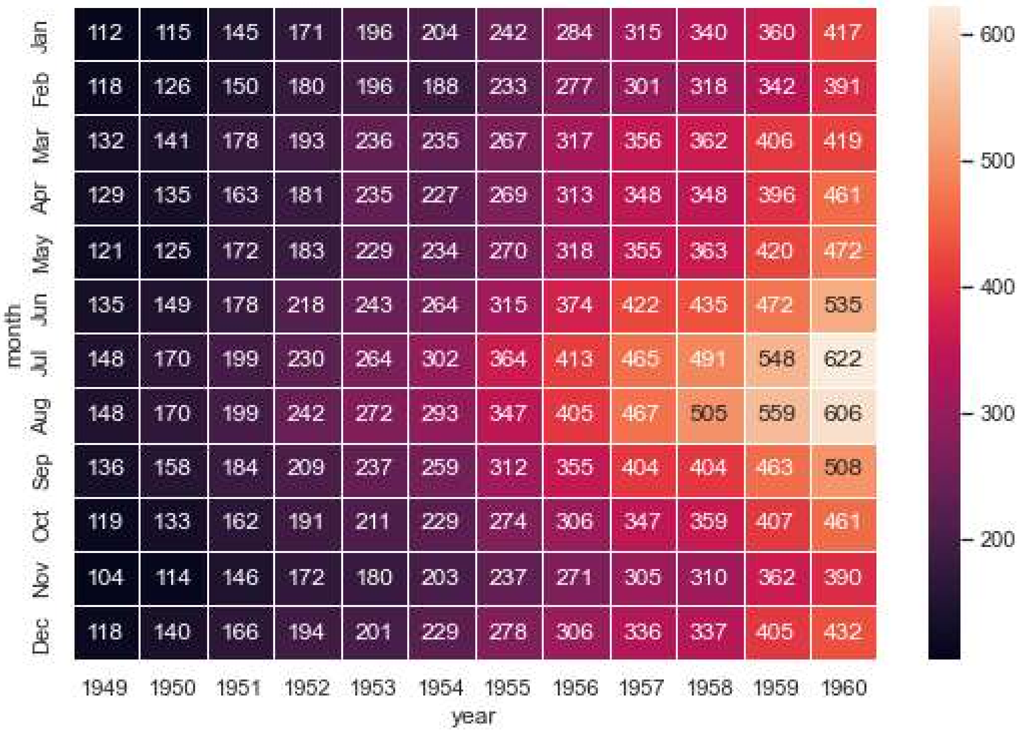


In [3]:

```
import matplotlib.pyplot as plt
import seaborn as sns
sns.set_theme()

# Load the example flights dataset and convert to long-form
flights_long = sns.load_dataset("flights")
flights = flights_long.pivot("month", "year", "passengers")

# Draw a heatmap with the numeric values in each cell
f, ax = plt.subplots(figsize=(9, 6))
sns.heatmap(flights, annot=True, fmt="d", linewidths=.5, ax=ax)
```

Out[3]:

```
<AxesSubplot:xlabel='year', ylabel='month'>
```

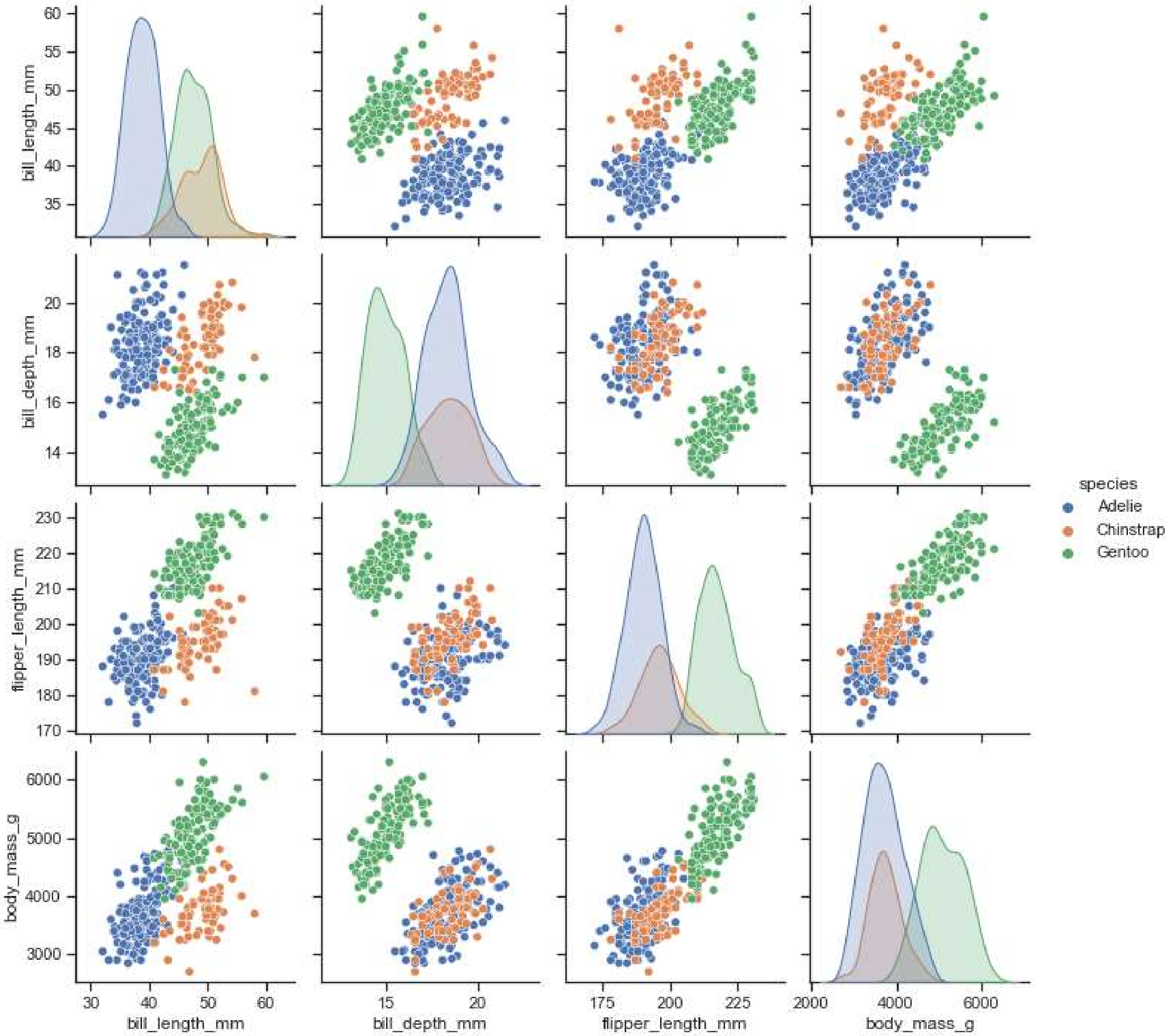


In [4]:

```
import seaborn as sns
sns.set_theme(style="ticks")

df = sns.load_dataset("penguins")
sns.pairplot(df, hue="species")
```

Out[4]:

```
<seaborn.axisgrid.PairGrid at 0x2a0ce431130>
```

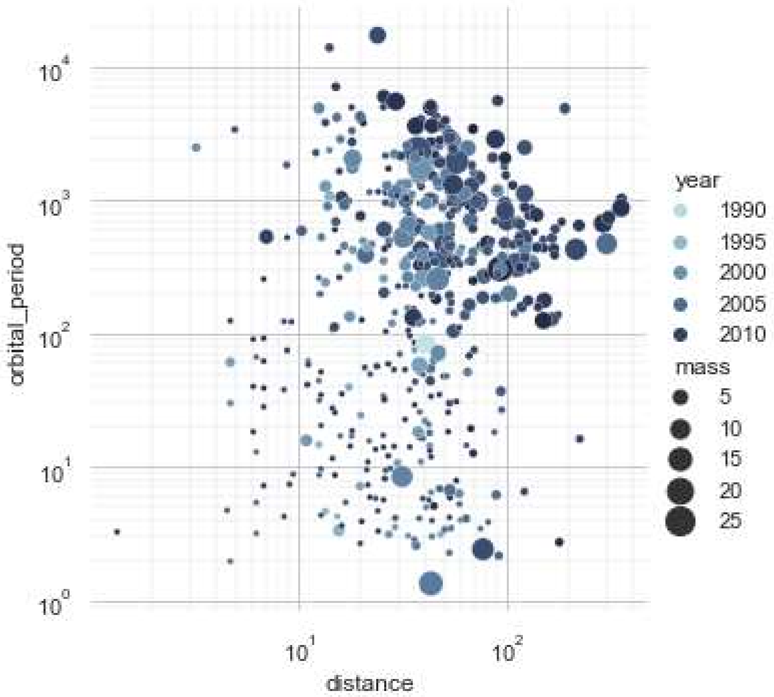


In [5]:

```
import seaborn as sns
sns.set_theme(style="whitegrid")

# Load the example planets dataset
planets = sns.load_dataset("planets")

cmap = sns.cubehelix_palette(rot=-.2, as_cmap=True)
g = sns.relplot(
    data=planets,
    x="distance", y="orbital_period",
    hue="year", size="mass",
    palette=cmap, sizes=(10, 200),
)
g.set(xscale="log", yscale="log")
g.ax.xaxis.grid(True, "minor", linewidth=.25)
g.ax.yaxis.grid(True, "minor", linewidth=.25)
g.despine(left=True, bottom=True)
```

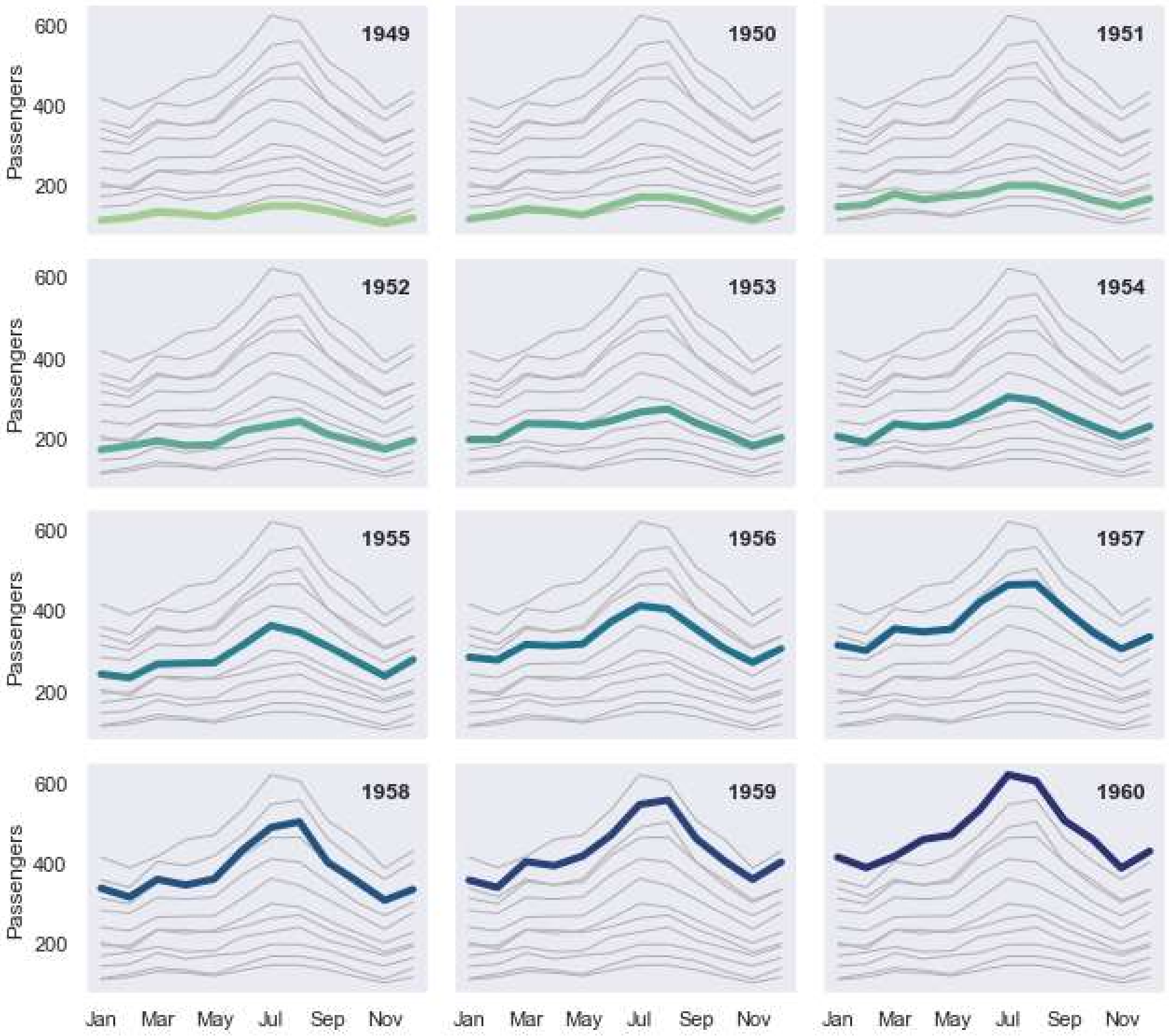
Out[5]:

```
<seaborn.axisgrid.FacetGrid at 0x2a0d49357f0>
```



In [6]:

```
import seaborn as sns

sns.set_theme(style="dark")
flights = sns.load_dataset("flights")

# Plot each year's time series in its own facet
g = sns.relplot(
    data=flights,
    x="month", y="passengers", col="year", hue="year",
    kind="line", palette="crest", linewidth=4, zorder=5,
    col_wrap=3, height=2, aspect=1.5, legend=False,
)

# Iterate over each subplot to customize further
for year, ax in g.axes_dict.items():

    # Add the title as an annotation within the plot
    ax.text(.8, .85, year, transform=ax.transAxes, fontweight="bold")

    # Plot every year's time series in the background
    sns.lineplot(
        data=flights, x="month", y="passengers", units="year",
        estimator=None, color=".7", linewidth=1, ax=ax,
    )

# Reduce the frequency of the x axis ticks
ax.set_xticks(ax.get_xticks()[::2])

# Tweak the supporting aspects of the plot
g.set_titles("")
g.set_axis_labels("", "Passengers")
g.tight_layout()
```

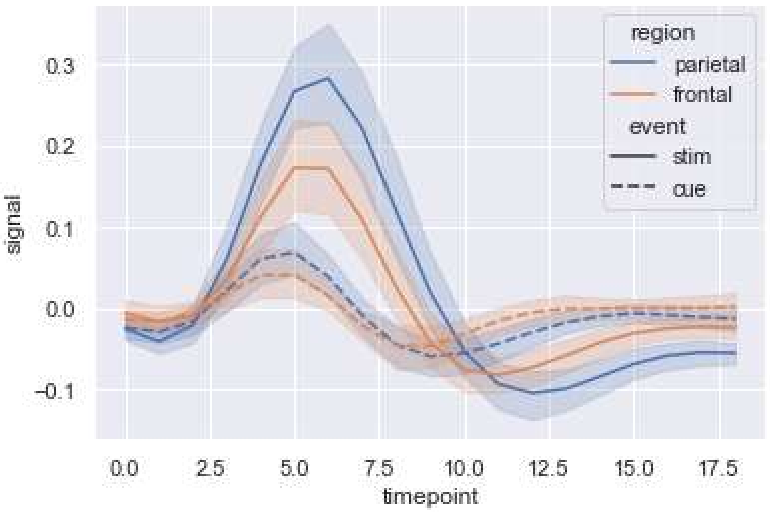


In [7]:

```
import seaborn as sns
sns.set_theme(style="darkgrid")

# Load an example dataset with long-form data
fmri = sns.load_dataset("fmri")

# Plot the responses for different events and regions
sns.lineplot(x="timepoint", y="signal",
             hue="region", style="event",
             data=fmri)
```

Out[7]:

```
<AxesSubplot:xlabel='timepoint', ylabel='signal'>
```


region
parietal
frontal
event
stim
cue
signal
0.3
0.2
0.1
0.0
−0.1
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
timepoint

```
In [ ]:
```