In [16]:
```python
# example adapted from
# https://matplotlib.org/stable/gallery/images_contours_and_fields/plot_streamplot.html
import numpy as np
import matplotlib.pyplot as plt
import matplotlib.gridspec as gridspec

w = 3
Y, X = np.mgrid[-w:w:100j, -w:w:100j]

# example matrix
A = np.array([
    [-1, -2],
    [3, -4]
])

# example linear vector field A*x
UV = A@np.row_stack([X.ravel(), Y.ravel()])
print(UV.shape)
U = UV[0,:].reshape(X.shape)
V = UV[1,:].reshape(X.shape)

fig = plt.figure(figsize=(10, 10))
gs = gridspec.GridSpec(nrows=3, ncols=2, height_ratios=[1, 1, 2])

#  Varying density along a streamline
ax0 = fig.add_subplot(gs[0, 0])
ax0.streamplot(X, Y, U, V, density=[0.5, 1])
ax0.set_title('Streamplot for linear vector field A*x');
ax0.set_aspect(1)
```
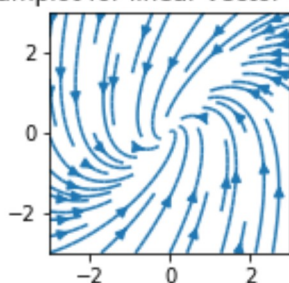
(2, 10000)

In [ ]: