```
def plot_magnitude_spectrum(magnitude_spectrum, title):
    plt.figure(figsize=(10, 10))
    plt.imshow(np.log1p(magnitude_spectrum), cmap='gray')
    plt.title(title)
    plt.colorbar()
    plt.show()
```

can you edit this so it shows the original image next to it as well

Certainly! Below is the updated `plot_magnitude_spectrum` function that shows the original image next to the magnitude spectrum:

python — Code kopieren

```python
import matplotlib.pyplot as plt
import numpy as np

def plot_magnitude_spectrum(original_image, magnitude_spectrum, title):
    fig, axes = plt.subplots(1, 2, figsize=(20, 10))

    # Display original image
    axes[0].imshow(original_image, cmap='gray')
    axes[0].set_title('Original Image')

    # Display magnitude spectrum
    axes[1].imshow(np.log1p(magnitude_spectrum), cmap='gray')
    axes[1].set_title(title)
    plt.colorbar(ax=axes[1], fraction=0.046, pad=0.04)

    plt.show()

# Example usage (assuming original_image and magnitude_spectrum are provided):
# plot_magnitude_spectrum(original_image, magnitude_spectrum, 'Magnitude Spectrum')
```

In this updated function:

- The original image is displayed in the left subplot.
- The magnitude spectrum is displayed in the right subplot with a logarithmic scale and a color bar.
- The `title` argument sets the title for the magnitude spectrum plot.

You can use this function to display both the original image and its magnitude spectrum side by side. If you need further adjustments, feel free to let me know!