CLAIMS

1. A controller for controlling movement of a propeller shaft on a vessel, the controller comprising processing circuitry, the processing circuitry being configured to cause the controller to:

detect movement of the propeller shaft by determining a signature of a sustained oscillation of the propeller shaft; and

control movement of the propeller shaft according to the determined signature;

wherein the processing circuitry is further configured to receive a currently used throttle level for driving the propeller shaft.

2. The controller according to claim 1, wherein the processing circuitry is further configured to control movement of the propeller shaft by forwarding a torque command signal to a drive subsystem of the propeller shaft as a set point, wherein the torque command signal is determined according to the determined signature.

3. The controller according to claim 1, wherein the processing circuitry is further configured to control movement of the propeller shaft also according to the currently used throttle level.

4. The controller according to claim 1, wherein the sustained oscillation is caused by a cavitation.

5. The controller according to claim 1, wherein the processing circuitry is further configured to reduce movement of the propeller shaft upon having determined that the sustained oscillation is caused by a cavitation.

6. The controller according to claim 1, wherein the processing circuitry is further configured to not reduce movement of the propeller shaft when the currently used throttle level is below a threshold value.

7. The controller according to claim 1, wherein movement of the propeller shaft is a linear acceleration.

8. The controller according to claim 7, wherein the acceleration is either tangential or axial with respect to the propeller shaft.

9. The controller according to claim 1, wherein movement of the propeller shaft causes a radial and/or axial displacement of the propeller shaft.

10. The controller according to claim 1, wherein movement of the propeller shaft is represented by a measured waveform of the sustained oscillation of the propeller shaft.

11. The controller according to claim 10, wherein the signature is determined by correlating a known waveform with the measured waveform.

12. The controller according to claim 10, wherein the signature is represented by a set of waveforms, the set of waveforms comprising quantized waveforms or classified waveforms.

13. The controller according to claim 12, wherein the set of waveforms is determined by passing the measured waveform through a bank of filters.

14. The controller according to claim 10, wherein the signature is a quantized short-time spectrum of the measured waveform.

15. The controller according to claim 10, wherein the signature is represented by a set of coefficients determined by convolving the measured waveform with a bank of filter responses, wavelet coefficients, Laplacian coefficients, or Hessian coefficients.

16. An arrangement for controlling movement of a propeller shaft on a vessel, the arrangement comprising:

a controller for controlling movement of the propeller shaft on the vessel, the controller including processing circuitry, the processing circuitry being configured to cause the controller to:

detect movement of the propeller shaft by determining a signature of a sustained oscillation of the propeller shaft; and

control movement of the propeller shaft according to the determined signature;

a vibration sensor configured to provide a signal indicative of the sustained oscillation to the controller; and

wherein the controller includes a propulsion control unit configured to control movement of the propeller shaft according to the determined signature.

17. The arrangement according to claim 16, wherein the vibration sensor is positioned in vicinity of, adjacent, or on the propeller shaft.

18. An electrical propulsion vessel comprising:

a controller for controlling movement of a propeller shaft on the vessel, the controller including processing circuitry, the processing circuitry being configured to cause the controller to:

detect movement of the propeller shaft by determining a signature of a sustained oscillation of the propeller shaft; and

control movement of the propeller shaft according to the determined signature; and

a vibration sensor configured to provide a signal indicative of the sustained oscillation to the controller; and

wherein the controller includes a propulsion control unit configured to control movement of the propeller shaft according to the determined signature.

19. A method for controlling movement of a propeller shaft on a vessel, the method comprising:

detecting movement of the propeller shaft by determining a signature of a sustained oscillation of the propeller shaft;

controlling movement of the propeller shaft according to the determined signature; and

receiving a currently used throttle level for driving the propeller shaft.

20. A computer program for controlling movement of a propeller shaft on a vessel, the computer program comprising computer code which, when run on processing circuitry of a controller, causes the controller to:

detect movement of the propeller shaft by determining a signature of a sustained oscillation of the propeller shaft;

control movement of the propeller shaft according to the determined signature; and

receive a currently used throttle level for driving the propeller shaft.

21. A controller for controlling movement of a propeller shaft on a vessel, the controller comprising processing circuitry, the processing circuitry being configured to cause the controller to:

detect movement of the propeller shaft by determining a signature of a sustained oscillation of the propeller shaft; and

control movement of the propeller shaft according to the determined signature;

wherein movement of the propeller shaft is represented by a measured waveform of the sustained oscillation of the propeller shaft.