We claim:

1. A method for verifying accurate operation for a flow meter (5), comprising the steps of:

receiving a vibrational response from the flow meter (5), wherein the vibrational response comprises a response to a vibration of the flow meter (5) at a substantially resonant frequency;

measuring at least one gain decay variable;

determining whether the gain decay variable is outside a predetermined range; and

adjusting ~~a filter~~filtering used in a stiffness calculation if the gain decay variable is outside the predetermined range.

2. The method for verifying accurate operation for a flow meter (5) of claim 1, wherein the step of measuring at least one gain decay variable comprises:

measuring the at least one gain decay variable at a first time point;

measuring the at least one gain decay variable at a second and different time point; and

adjusting the ~~filter~~filtering only if the at least one measured gain decay variable value at the first time point is different from the at least one measured gain decay variable value at the second time point.

3. The method for verifying accurate operation for a flow meter (5) of claim 1, wherein the gain decay variables comprise at least one of a pickoff voltage, drive currents, flowtube frequency, and temperature.

4. The method for verifying accurate operation for a flow meter (5) of claim 3, comprising:

measuring a first slope of one of the gain decay variables over a first time period;

measuring a second slope of the same one of the gain decay variables over a second time period;

determining a trend exists if the first slope and second slope are the same; and

preventing meter verification while a trend exists.

5. The method for verifying accurate operation for a flow meter (5) of claim 1, wherein a coefficient of variation (CV) of the at least one gain decay variable is calculated.

6. The method for verifying accurate operation for a flow meter (5) of claim 1, wherein the step of adjusting the filtering comprises at least one of increasing the number of filtering events, the types of filters employed, and the number of samples filtered.

7. The method for verifying accurate operation for a flow meter (5) of claim 1, comprising the steps of:

measuring a decay characteristic (ζ) by removing the excitation of the flow meter (5);

allowing a vibrational response of the flow meter (5) to decay down to a predetermined vibrational target while measuring the decay characteristic; and

adjusting the filtering by changing a number of decay characteristic samples taken.

8. Meter electronics (20) for verifying accurate operation for a flow meter (5), the meter electronics (20) comprising an interface (201) for receiving a vibrational response from the flow meter (5), with the vibrational response comprising a response to a vibration of the flow meter (5) at a substantially resonant frequency, and a processing system (203) in communication with the interface (201), with the meter electronics (20) comprising:

the processing system (203) being configured to measure at least one gain decay variable, determine whether the gain decay variable is outside a predetermined range, and adjust filtering used in a stiffness calculation if the gain decay variable is outside the predetermined range.

9. The meter electronics (20) of claim 8, wherein measuring at least one gain decay variable comprises measuring the at least one gain decay variable at a first time

point, and measuring the at least one gain decay variable at a second and different time point, and adjusting ~~filters~~the filtering only if the at least one measured gain decay variable value at the first time point is different from the at least one measured gain decay variable value at the second time point.

10. The meter electronics (20) of claim 8, wherein gain decay variables comprise at least one of pickoff voltages, drive currents, flowtube frequency, and temperature.

11. The meter electronics (20) of claim 10, wherein the processing system (203) is further configured to measure a first slope of one of the gain decay variables over a first time period and a second slope of the same one of the gain decay variables over a second time period, and determine that a trend exists if the first slope and second slope are the same, wherein meter verification is prevented while a trend exists.

12. The meter electronics (20) of claim 8, wherein a coefficient of variation (CV) of the at least one gain decay variable is calculated.

13. The meter electronics (20) of claim 8, wherein adjusting filtering comprises at least one of increasing the number of filtering events, the types of filters employed, and the number of samples filtered.

14. The meter electronics (20) of claim 8, with the processing system (203) being further configured to measure the decay characteristic (ζ) by removing the excitation of the flow meter (5) and allowing the vibrational response of the flow meter (5) to decay down to a predetermined vibrational target while measuring the decay characteristic, and wherein adjusting filtering comprises changing a number of decay characteristic samples taken.