ABSTRACT

A vibrating beam accelerometer (**10**) can be modelled mathematically as a system having two beams (**11**, **11′**) operating in a differential push-pull mode, such that each of the two beams vibrates at corresponding first and second frequencies of vibration (*f*+, *f*-) at which the respective amplitude (*A*+, *A*–) is dominant outside a predetermined lock-in zone within which the respective dominant frequencies (f_1, f_2) of the first and second beam are equal. Acceleration is determined inside a predefined range that includes the lock-in zone, as a linear function of measured vibration amplitudes of the two beams. Outside the predefined range, acceleration may be derived as a function of a difference between the measured vibration frequencies of the two beams.