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Sommario/riassunto	Due to a trend towards miniaturization of many MEMS devices and thus also the cavity volumes of inertial sensors, the influence of slight changes in the damping atmosphere in sensor cavities on the reliability of the sensors is increasing. In this work, mechanisms affecting the pressure stability of gyroscopes are investigated and countermeasures are presented. A focus is placed on desorption sources as well as gas diffusion paths in the sensor layer stack.