

Abstract

The invention is directed to a microscope with adaptive optics in the observation beam path, wherein a transmitting wavefront modulator is advantageously located between objective and tube lens or a reflecting wavefront modulator is coupled in via beam splitters, and to a microscope with adaptive optics in the illumination beam path. The invention is further directed to a laser scanning microscope with at least one adaptive optics following the laser in the beam path, advantageously with first adaptive optics for coarse adjustment and second adaptive optics for fine adjustment, wherein the adaptive optics can be constructed as reflecting wavefront modulator and the laser can be constructed as a short-pulse laser, and further a combination with a pre-chirping unit can be provided.