

HOM-Free Cavities, R. BONI, INFN-LNF - Intense beam current and multibunch operation are the essential features for increasing the luminosity of the modern colliders or improving the performances of the synchrotron light sources. The high order modes (HOM)-free cavities can give the major contribution to these tasks since the beam current limit and the coupled-bunch mode instabilities mostly arise from the parasitic modes of the accelerating cavities. This article deals with the study and the projects which have led to the development of RF cavities with a low content of high order parasitic modes. The different techniques adopted in both superconducting and room-temperature radiofrequency are analysed. Drawbacks in the use of these special devices are also reviewed.