

High Frequency Properties of Wakefields in TESLA Cavities, A. NOVOKHATSKI, M. TIMM, T. WEILAND - The FEL operation in the TESLA linear collider project requires very short, intense bunches. In the cavities these bunches excite very high frequency electromagnetic fields. There are severe concerns, that these fields will remain inside the structure for a long time, break up the Cooper pairs and finally lead to a breakdown of the super conductivity. It is estimated, how much of the energy stored in high frequency electromagnetic fields vanishes through the beam pipes immediately and during a short period after the bunch has passed the cavity. By using time domain calculations the energy flow is computed and a Fourier analysis of the surface currents is performed.