

BEAM-INDUCED HEATING OF THE KICKER CERAMICS CHAMBERS AT NSLS-II

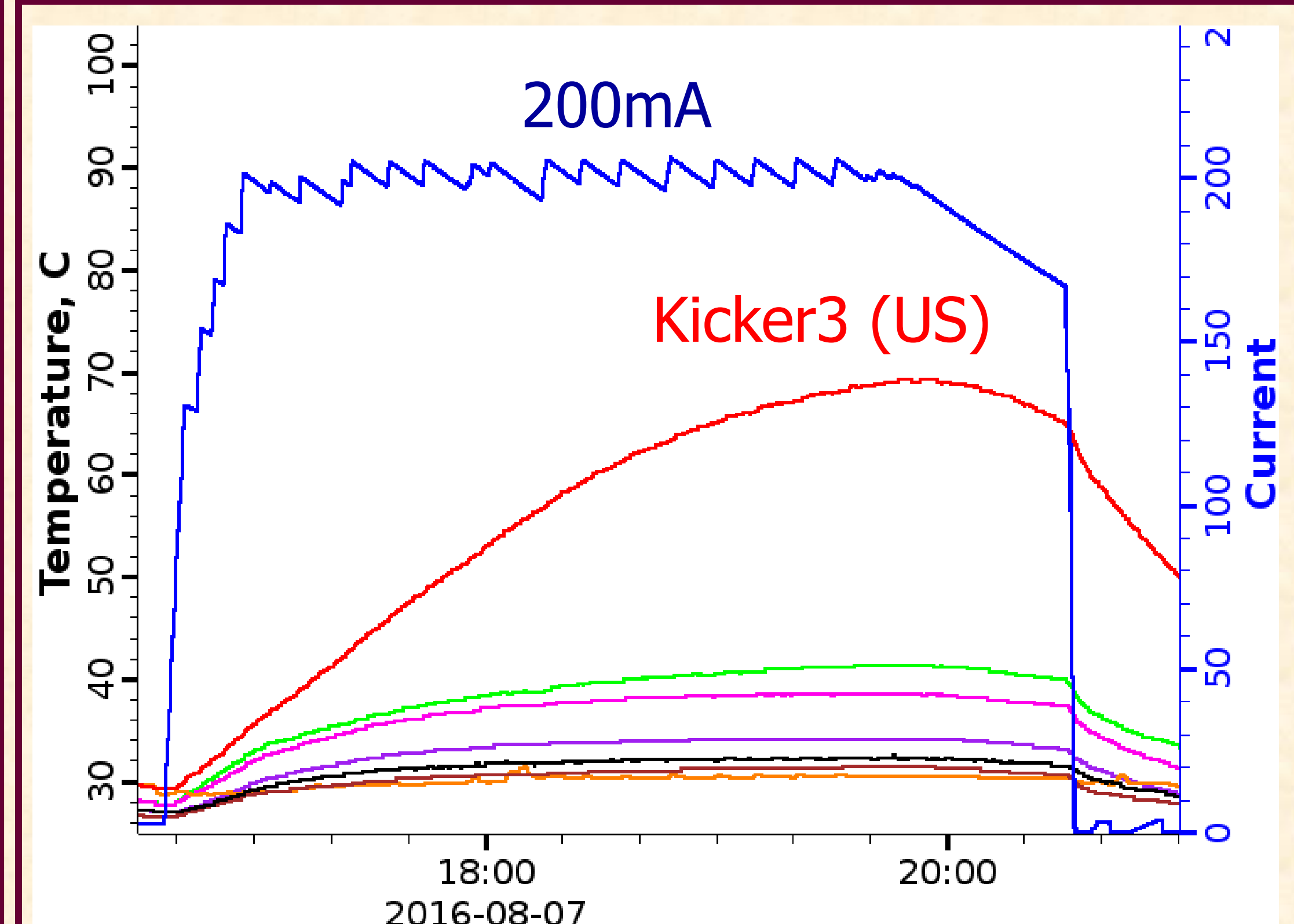
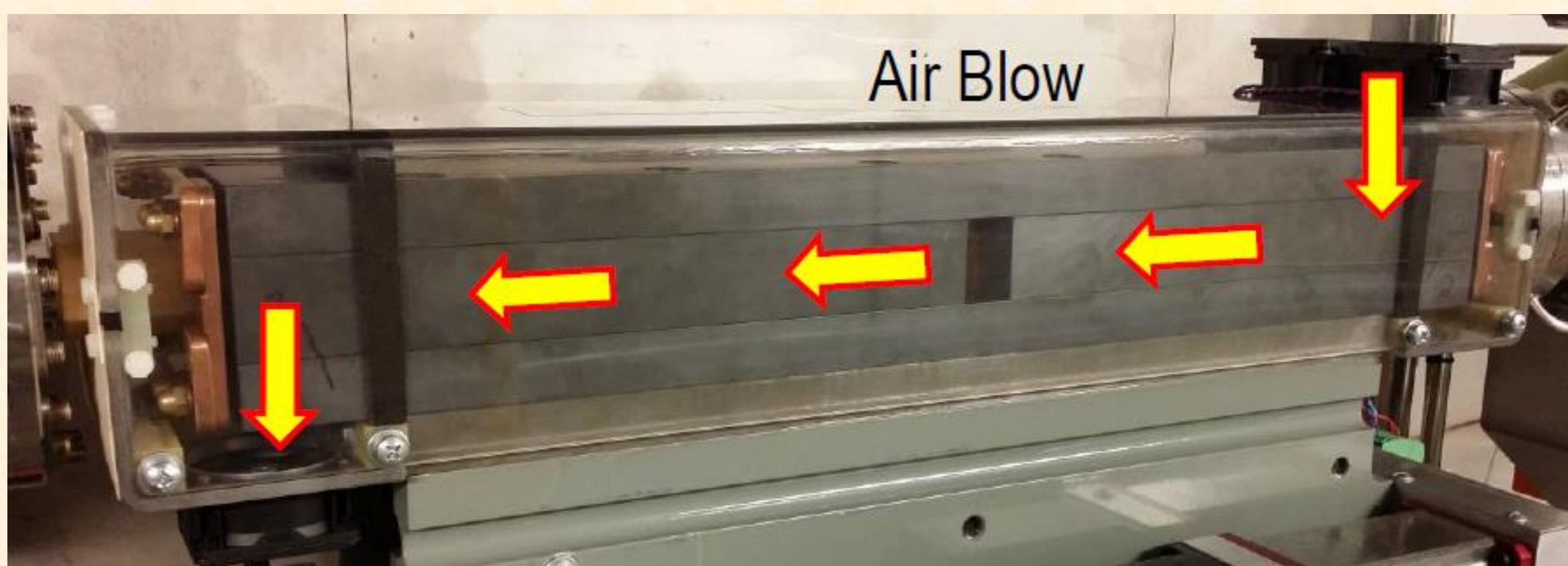
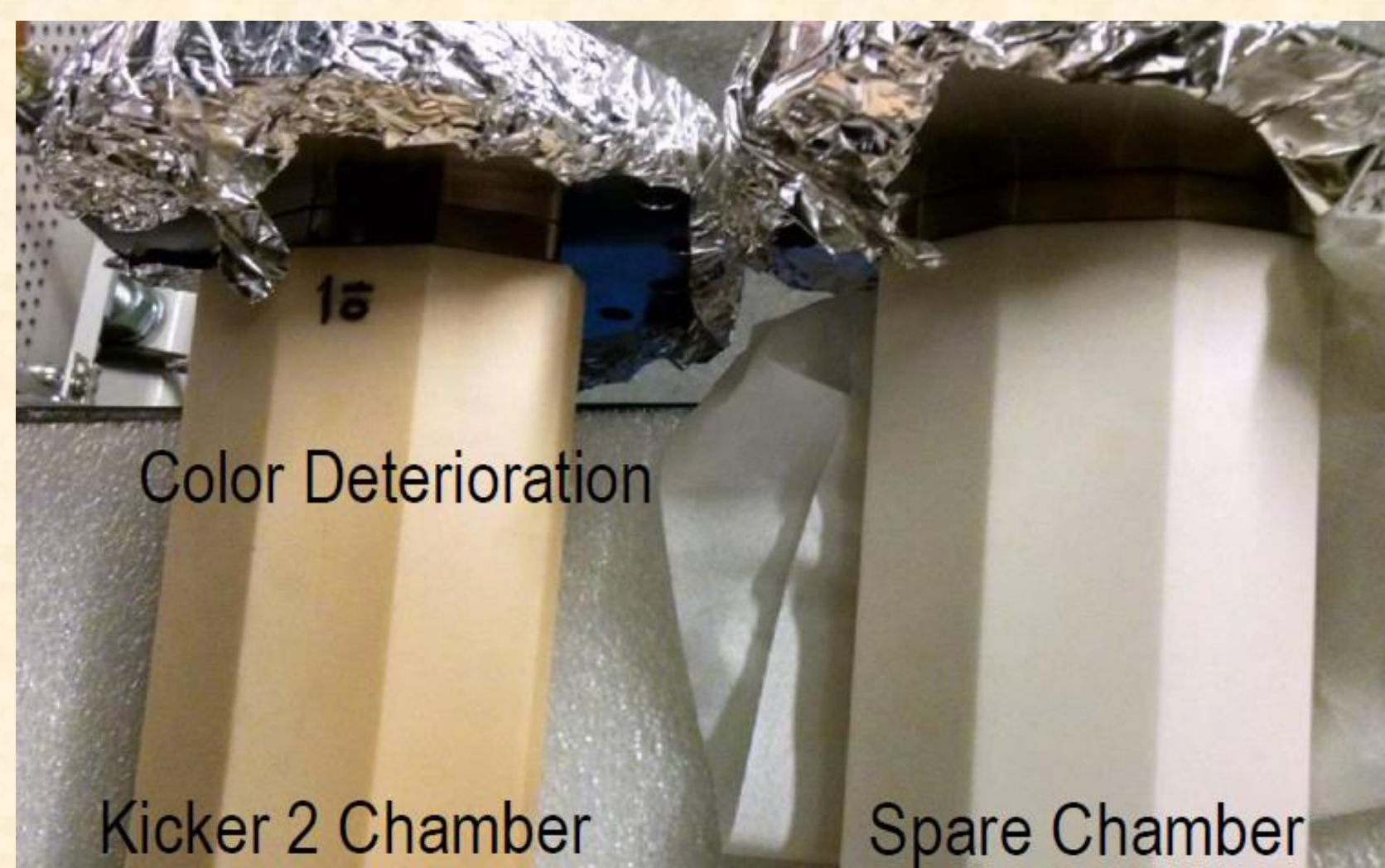
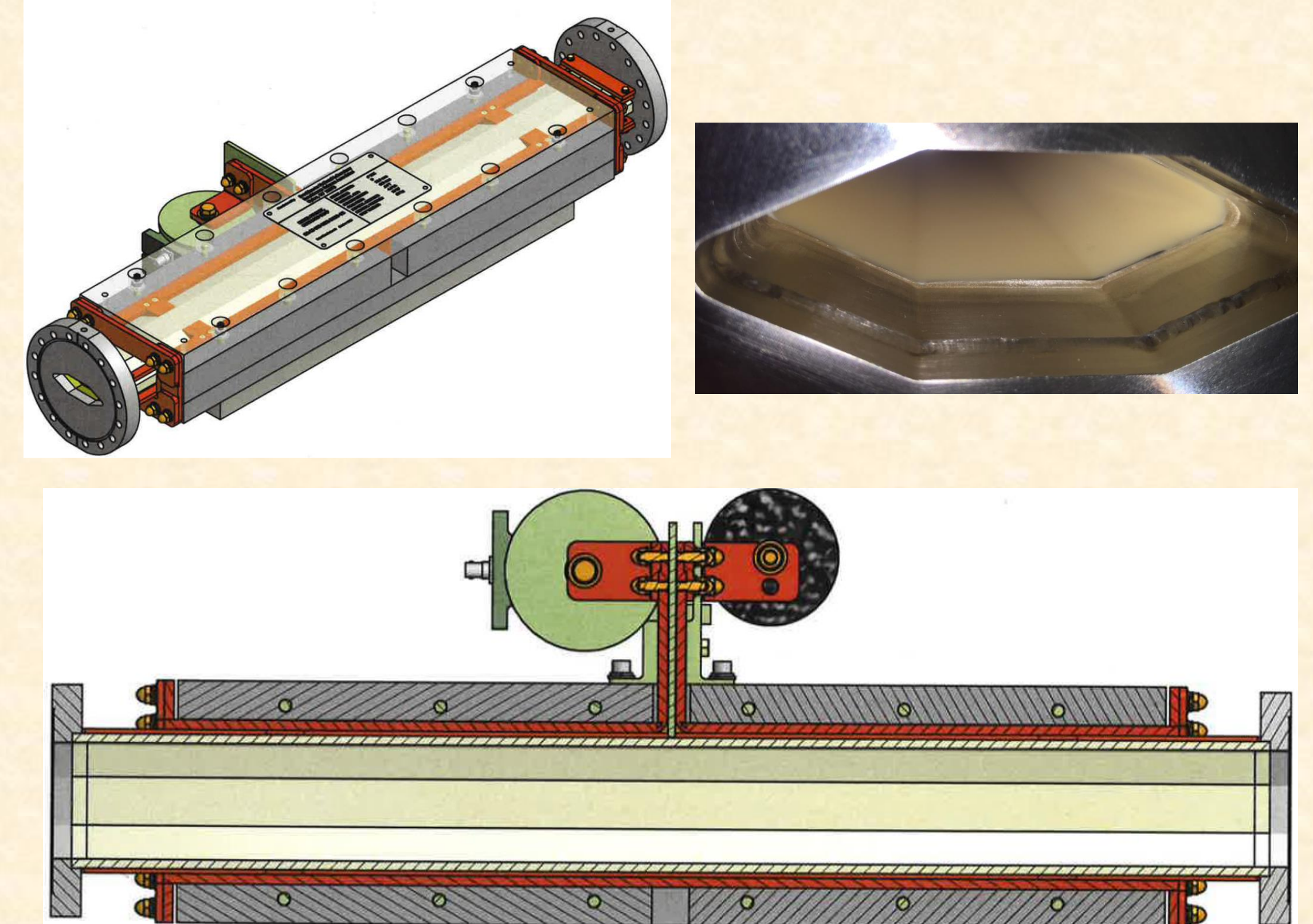
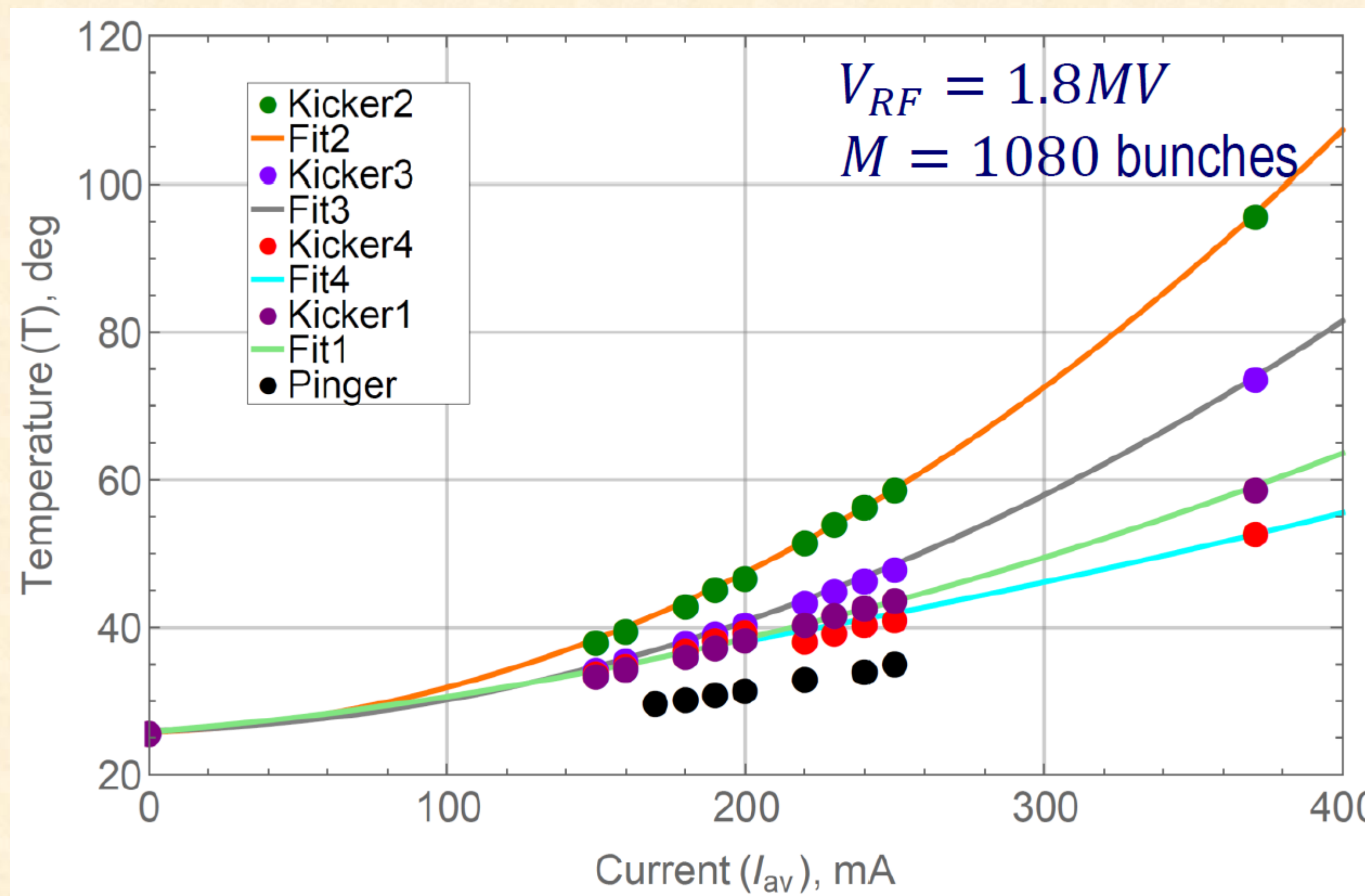
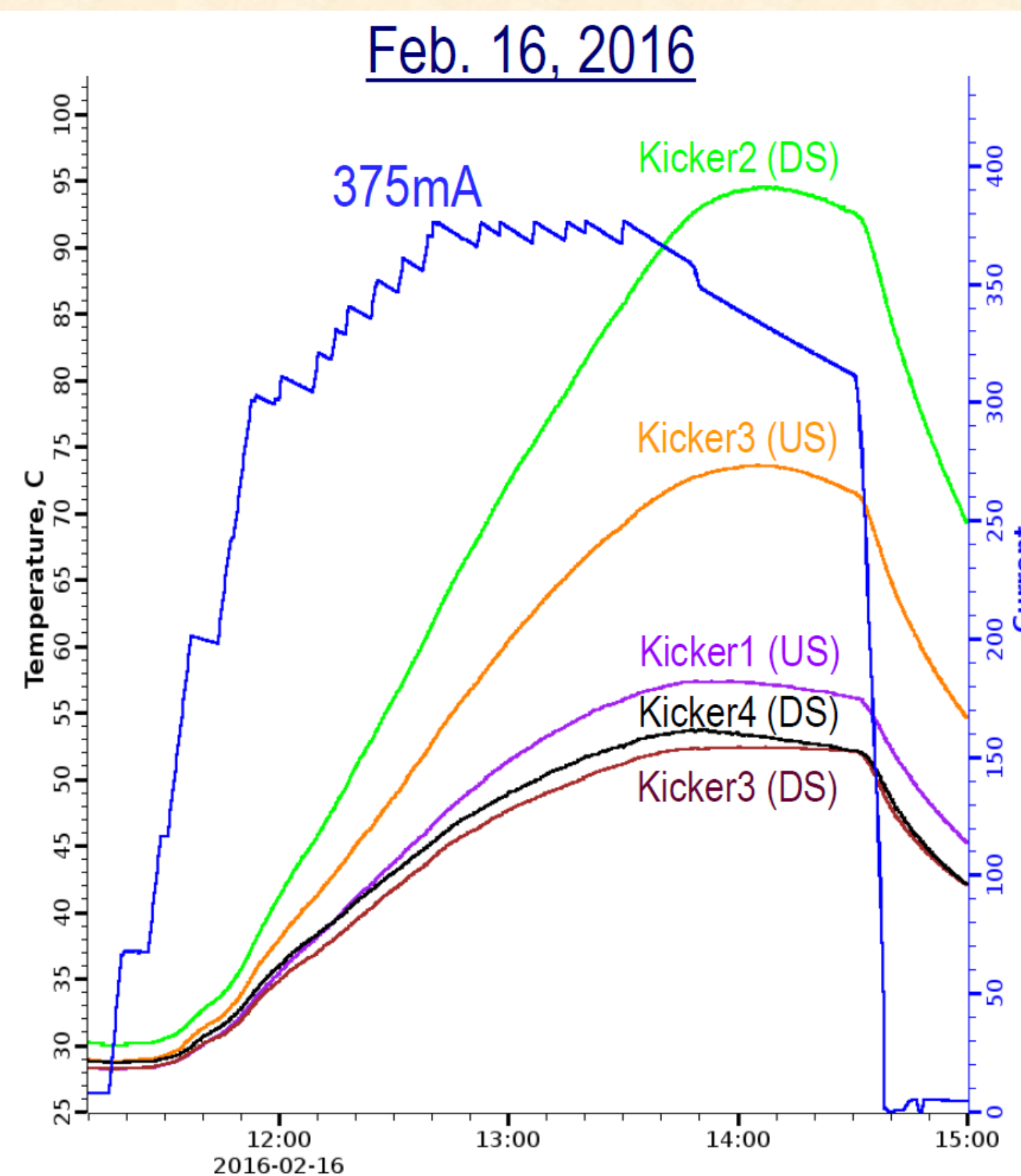
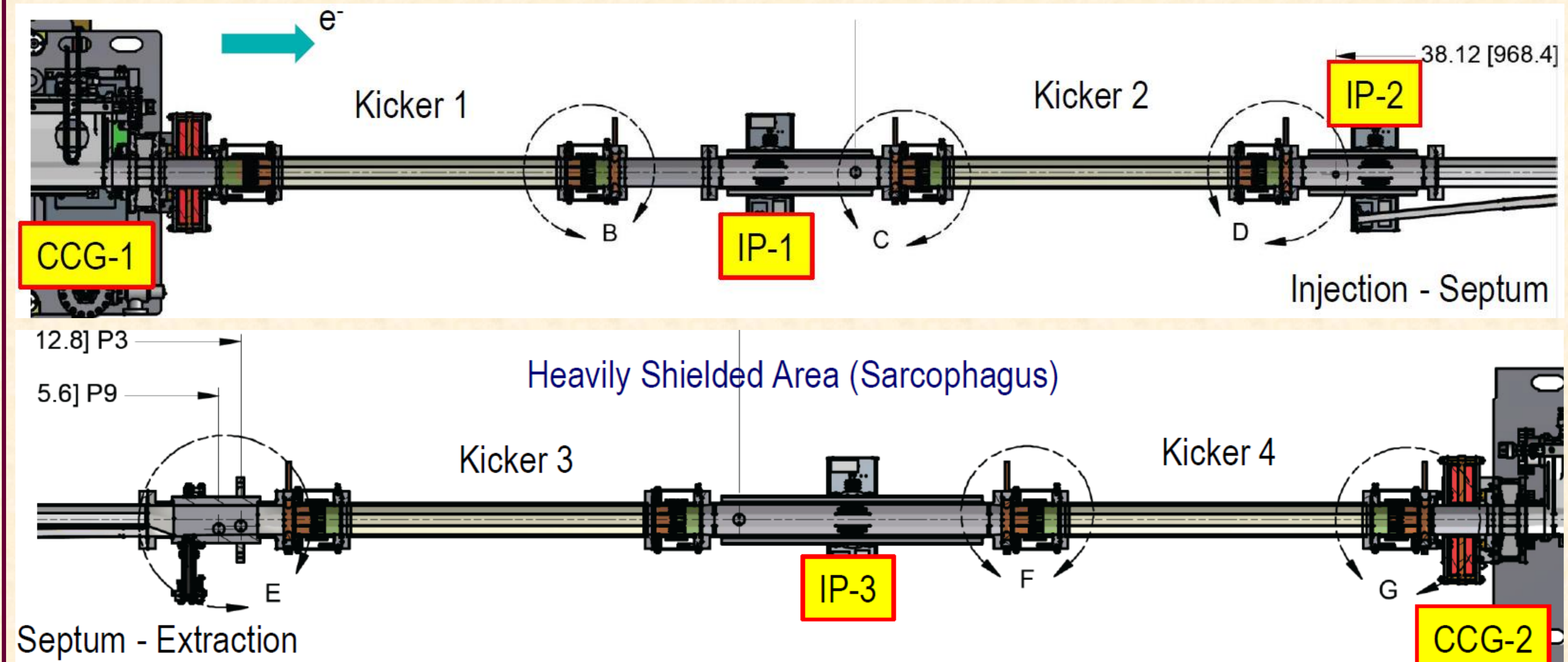


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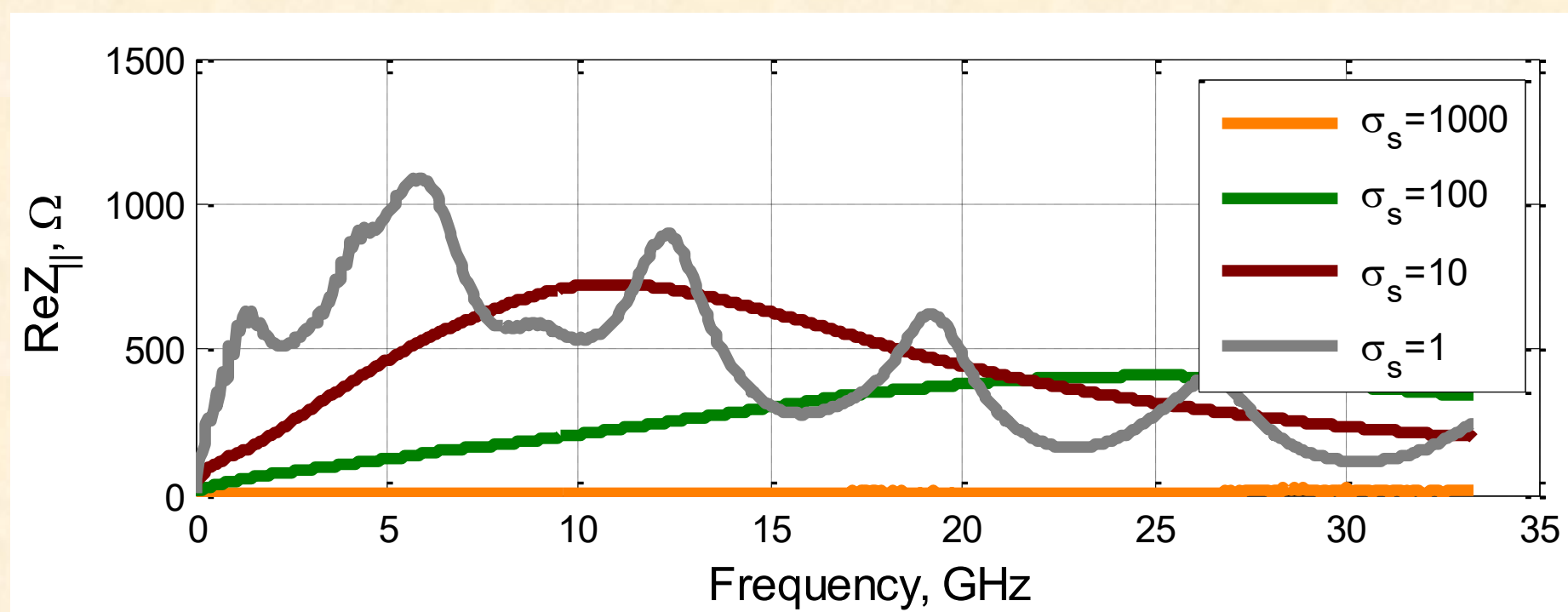
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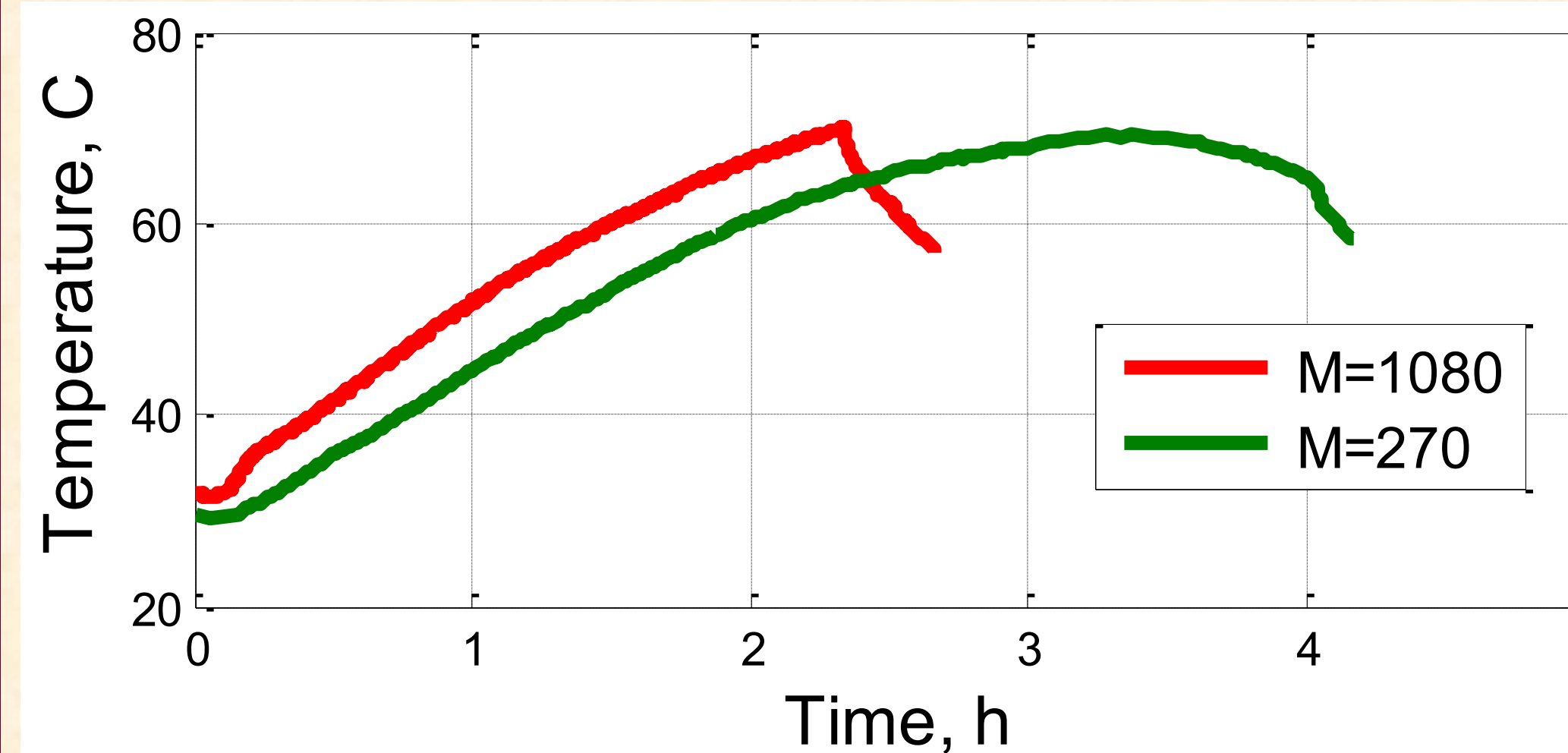
First experience with the beam-induced heating of the ceramics chambers in the NSLS-II storage ring has been discussed. Total five ceramics chambers are considered to be replaced due to overheating concern during of upcoming $I_{av} = 500mA$ operations. The air cooling fans has been installed as a temporarily solution to remove heat. Four ceramic chambers with 2 microns titanium (Ti) coating are installed in the injection straight section (Cell 30) and one the same chamber is installed at different straight section (Cell 22) in pinger location. The schematic layout of the injection straight section is shown in Fig. 1. The kicker ceramic chambers have a ceramic length of 755 mm and octagonal profile.



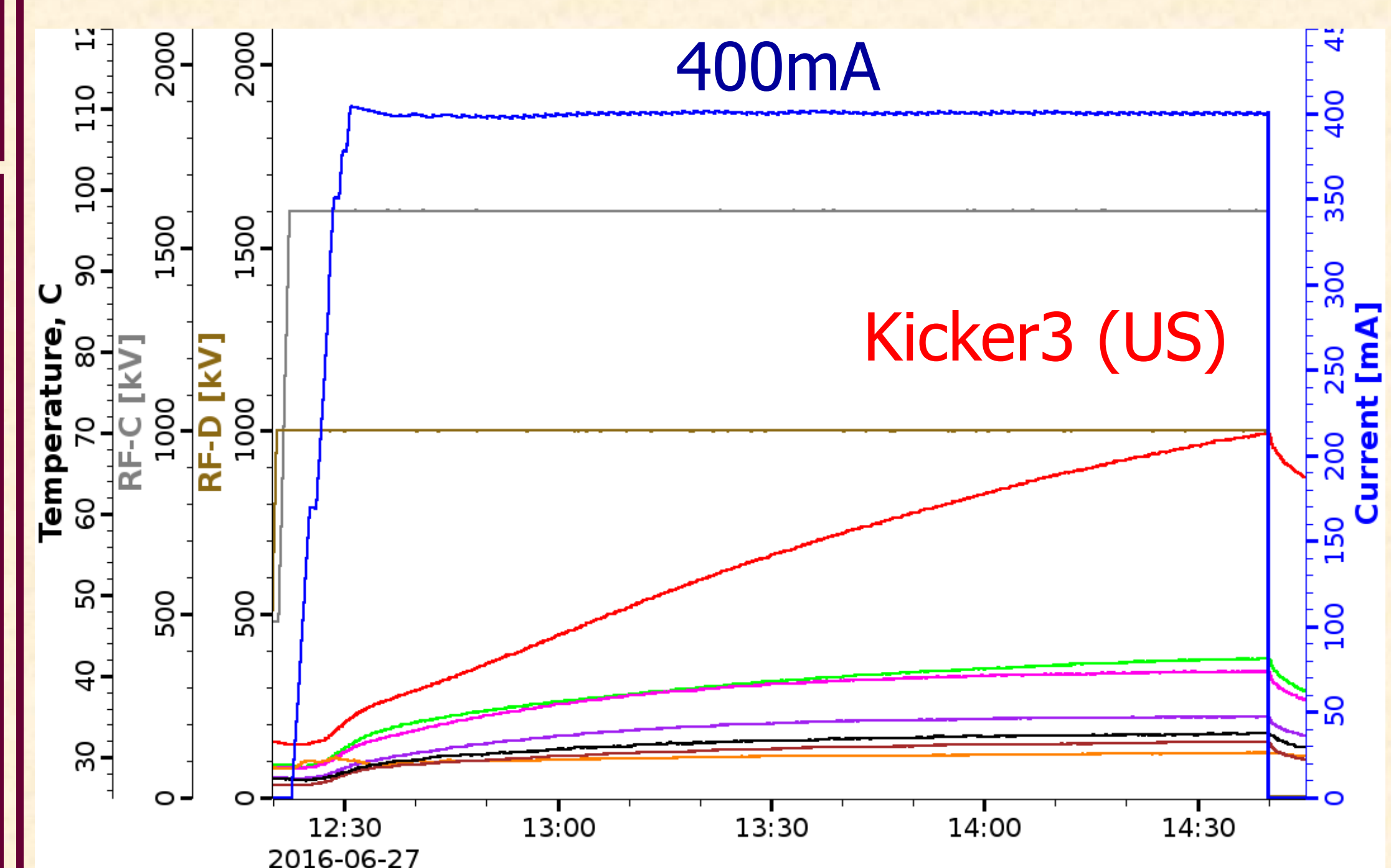
Beam studies at $I_{av} = 200mA$ with one train of $M = 270$ bunches



Real part of the longitudinal impedance simulated by the GdfidL code up to 32GHz for different electrical conductivities of the ceramics chamber.



Temperature rise comparison as a function of time. Time is in hours. Number of bunches is M



Beam studies at $I_{av} = 400mA$ with one train of $M = 1080$ bunches