Future needs and future directions

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- **A biased view on:**

- **Where we are**

- **What should be done**

- **How can we do it**

Future needs and future directions: Where we are

- **It is now clear that e-cloud related phenomena :**

-are a serious potential problem affecting accelerators ultimate performances

- depends on many parameters (from surface properties to geometry, beam dynamics etc etc…)

-"Real" experiments are not easy

-Simulations are complex and based on assumptions

Future needs and future directions: What should be done

- **Different simulation program should give similar predictions!**

- **Understand the importance of the various parameters on the final results.**

- **Benchmark codes with reliable experiments on existing machines.**

- **Get the most detailed understanding on surface properties, chemistry and chemical modifications with state of the art techniques.**

- **Optimize parameters to minimize detrimental effects**

Future needs and future directions: How can we do it

- **IT IS A BIG EFFORT**

- REQUIRE SYNERGIC COLLABORATIONS BETWEEN DIFFERENT PEOPLE: THEORETICIAN, ACCELERETOR, VACUUM AND SURFACE SCIENTISTS SHOULD WORK TOGHETHER!.

- **MAYBE IT IS TOO AMBITIOUS FOR A SINGLE LAB!**

- NEED OF SIGNIFICANT RESOURCES AND SYNERGIC EFFORT, AMONG DIFFERENT LABS CLEARLY SUPPORTED BY THE ENTIRE COMMUNITY.