Introduction: RF Systems

Grid to DC: Modulators, Carlos Martins, ESS

DC to RF:

Established technologies:
- Tetrodes (diacrodes), Eric Montesinos, CERN

Established technologies with newly discovered potential:
- Klystrons, Chris Lingwood, STFC
- Solid state, Marcos Gaspar, PSI
- IOTs, Eric Montesinos, CERN

Technologies not yet (or hardly) used for accelerators
- Magnetrons, Brian Chase, FNAL

Goal of session on RF sources

Establish a list of comparable numbers, assuming DC to RF power conversion:

RF source type	Gain [db]	Maximum output power pulsed [kW]	Rise time [us]	Pulse length range [ms]	Rep rate range [Hz]	Max. output power CW [kW]	Efficiency at working point [%]	High voltage needs [kV]	Frequency range [MHz]
Typical performance today A									
Typical performance today B									
Performance potential									

- State of the art today? Performance potential?
- Power/frequency/d.c. limitations per technology?
- Which systems need more air cooling (and therefore AC) than others?
- Where is the "reasonable" balance between efficiency investment cost ($/W)?
- Do we reduce reliability, when we try to increase efficiency?
- Which R&D directions have the highest promise?