

## **Some thoughts on Cost Estimates for BAW-1**

Peter H. Garbincius – 27aug2010

filename: BAW-1\_prep\_PHG\_27aug2010.doc

### 1. Two tunnels => One Tunnel (RF in tunnel)

I think we have most of the unit costs needed for RF in tunnel but the unit costs for Klystron Cluster are only 1 significant figure  
\$ 1000/m for pipe and \$ 20,000/RF unit for coax tap offs  
is there any updated?

I don't have design and costs for the DRFS Civil:

- diameter and cost of beam tunnel

- diameter and cost of "pilot tunnel" and crossovers

- radiation shielding for components

We have the differential estimates from SB2009 work and presented at AAP in Oxford in January 2010.

I'll brush them off and present summary.

I expect that Wilhelm will provide costs for pulsed HV cables for XFEL configuration which is  
modulators/PS upstairs + transformer/klystron in tunnel

## 2. Choice of Gradient: Average and Spread

how does cost per cavity vary as function of this parameter?

is it just a function of Yield vs. Gradient?

easy scaling number of cavities, cryomodules, RF units, tunnel lgt.

second order: operating margin, power, cooling, cryo, RTML length

Do we want to do this for RDR and also KCS and DRFS configurations?

Has anything changed since SB2009?

Will anything change at BAW-1 at KEK?

How soon will we need cost estimates for these options?

*Peter*