TW Cav notes

MAXACCELERATION = TRUE

1. particles with all coordinates=zero is tracked
2. phase adjusted so it is maximally accelerated
3. phase provided by use added to the phase calculated above

CAVLENGTH := 1.0;

phase = 0.0/360.0;

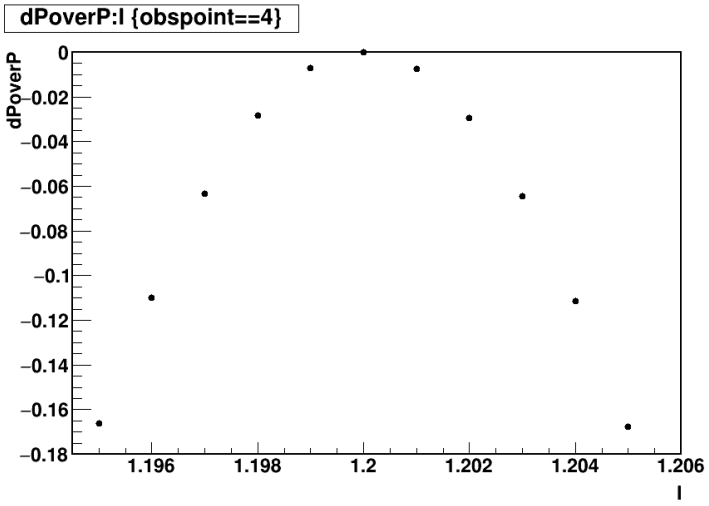
VOLT := 15;

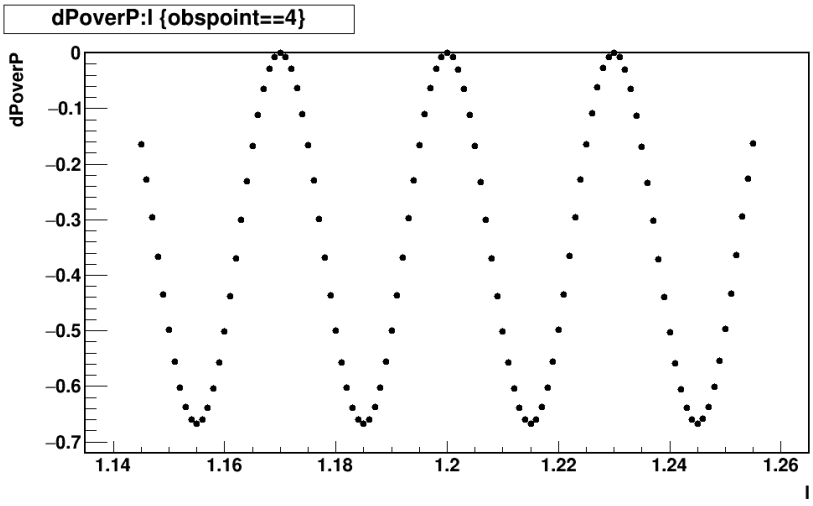
CAV: TWCAVITY, L = CAVLENGTH, VOLT := VOLT, LAG := phase, FREQ=10000;

E0 = 0.03

E= 0.04499993064

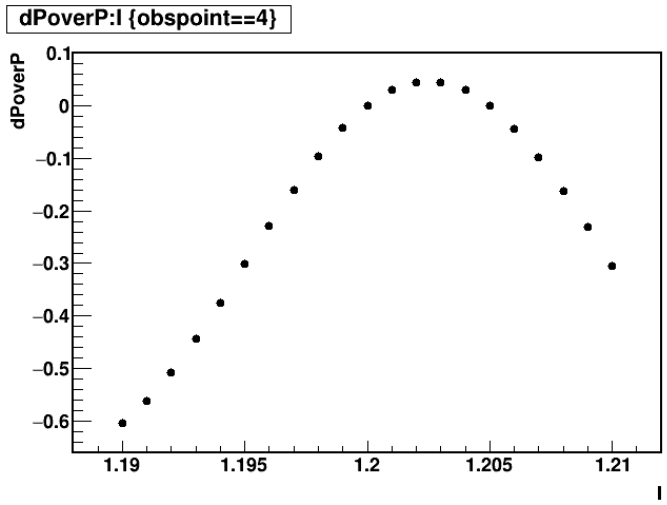
10GHz -> wave length is 3cm -> perfectly fine





Phase +30/360

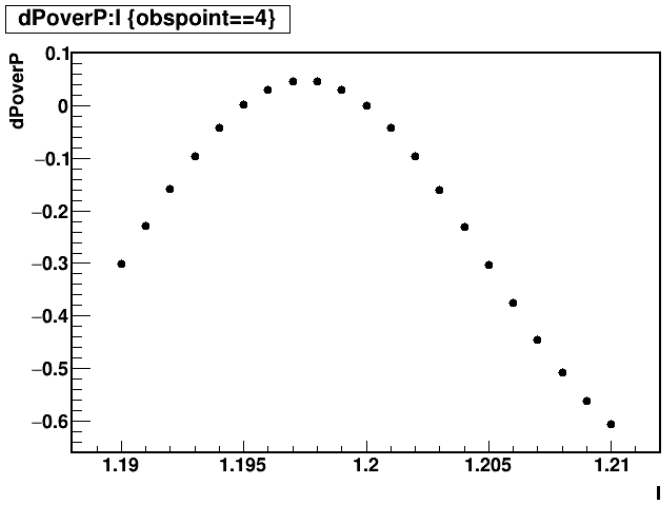
0.04301312871



Phase -30/360

E = 0.04296751328

Energy is different compared to +30 deg because relativistic beta is < 1 and the wave moves with c

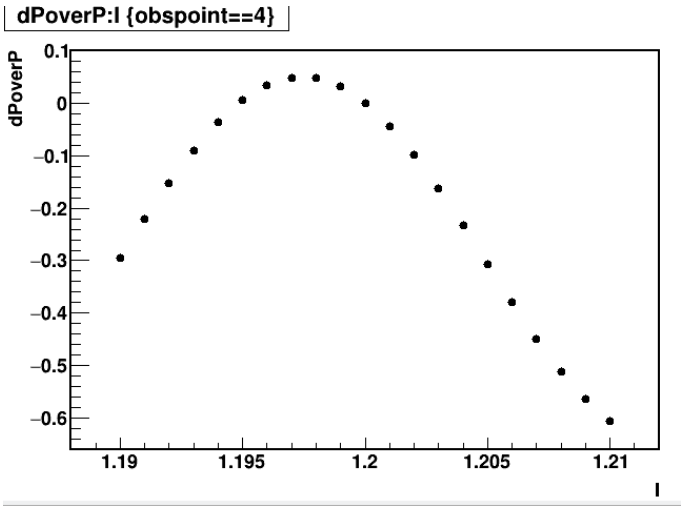


MAXACCELERATION = FALSE

Phase = 0

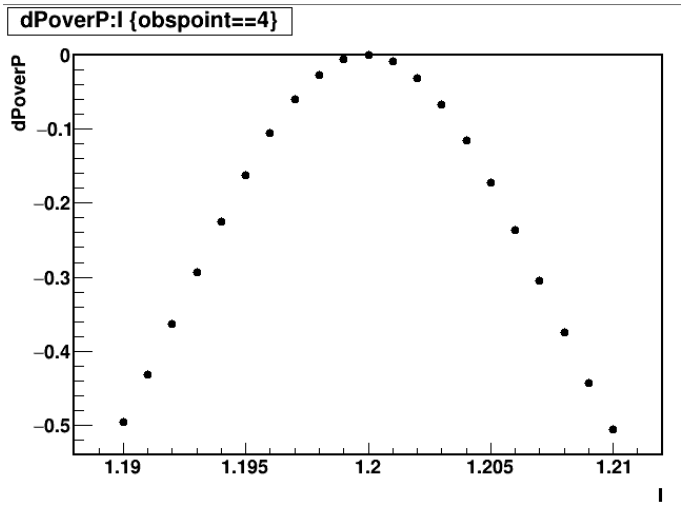
When time of tracking starts, the cavity also starts waving from phase. So by the time it arrives to the cavity wave slips by 2 pi f t / c

E = 0.04285683783



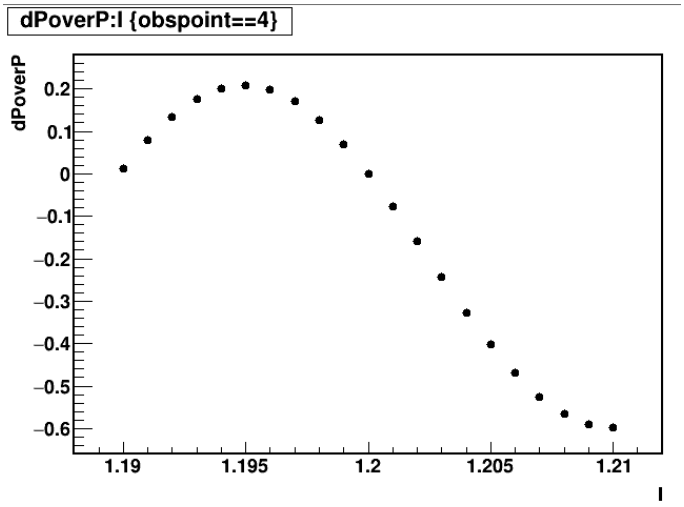
Phase+30

E= 0.04499769261, phase compensates delay of particle starting with X(:)=zero



Phase -30

E=0.03727100373



Voltage defines total acceleration

Volt=15, L=2m same as Volt=15, L=1m