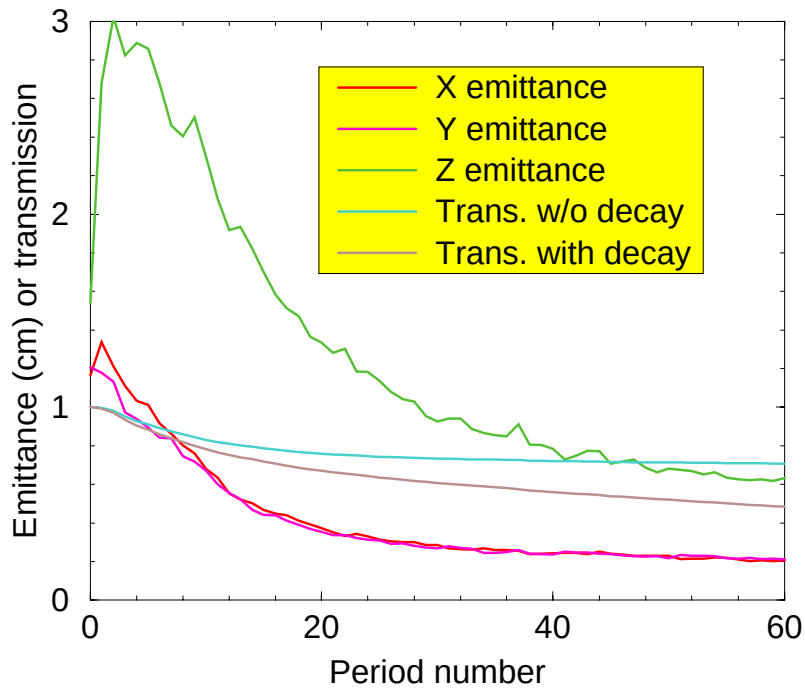
02/26/02

Symmetric tetragonal cooler: RF at 4 long SS, LiH wedge absorbers 0.75 MeV/cm; 3 Kmuons

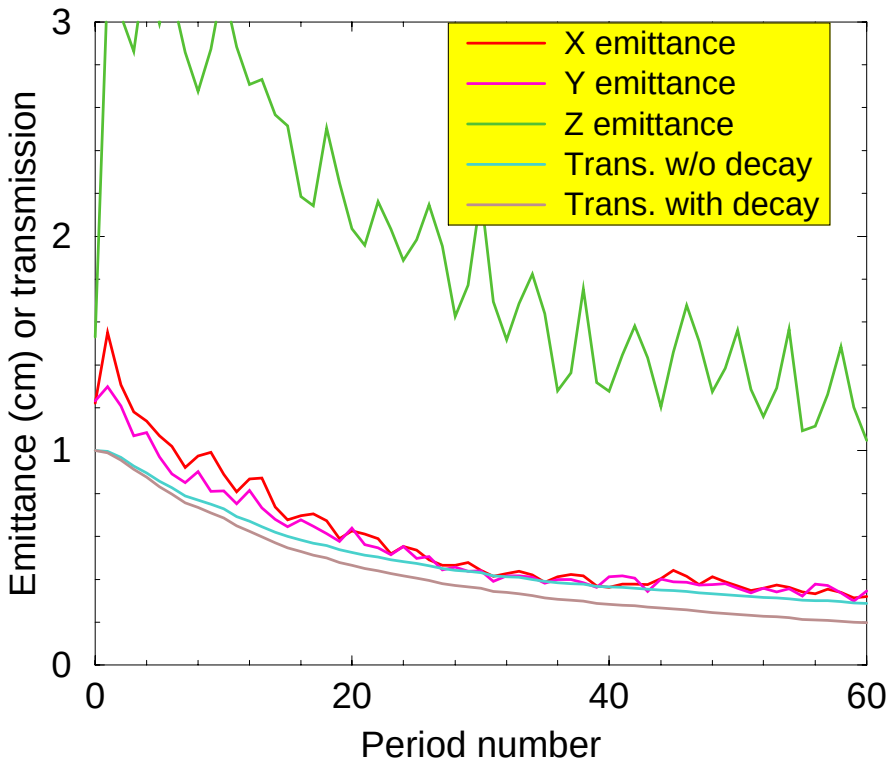


Number of turns	0	5	10	15
X-emittance (cm)	1.2	0.37	0.24	0.21
Y-emittance (cm)	1.2	0.35	0.24	0.21
Z-emittance (cm)	1.5	1.3	0.79	0.63
6D-emittance (cm^3)	2.2	0.18	0.045	0.028
Transmission without decay	1	0.76	0.72	0.71
Transmission with decay	1	0.67	0.56	0.48
Merit factor ($Tr \times \varepsilon_{6,ini}/\varepsilon_{6,fin}$)	1	8.2	27	38

Conclusion: Transverse emittance at the ring cooler is about the same as at SFOFO channel. Longitudinal emittance is noticeable less. Realistic injection scheme should be considered for comparison of the performances.

02/26/02

Asymmetric tetragonal cooler: RF at 3 long SS, LiH wedge absorbers 0.75 MeV/cm; 3 Kmuons

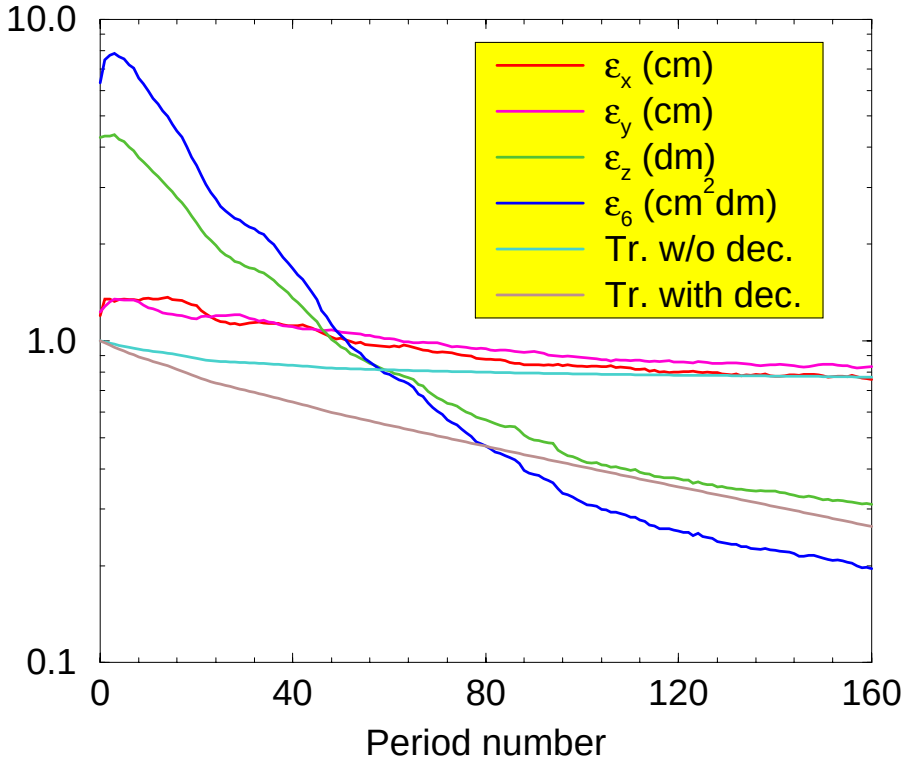


Number of turns	0	5	10	15
Horizontal emittance (cm)	1.2	0.63	0.36	0.32
Vertical emittance (cm)	1.2	0.64	0.41	0.34
Longitudinal emittance (cm)	1.5	2.0	1.3	1.0
6D emittance (cm^3)	2.3	0.81	0.19	0.12
Transmission without decay	1	0.53	0.36	0.29
Transmission with decay	1	0.47	0.28	0.20
Merit factor ($Tr \times \varepsilon_{6,ini}/\varepsilon_{6,fin}$)	1	1.3	3.4	3.9

Large energy spread + long drift w/o RF lead to the particle loss.

02/26/02

Symmetric octagonal compressor: RF at 8 long SS, LiH wedge absorbers 0.32 MeV/cm; 10 Kmuons

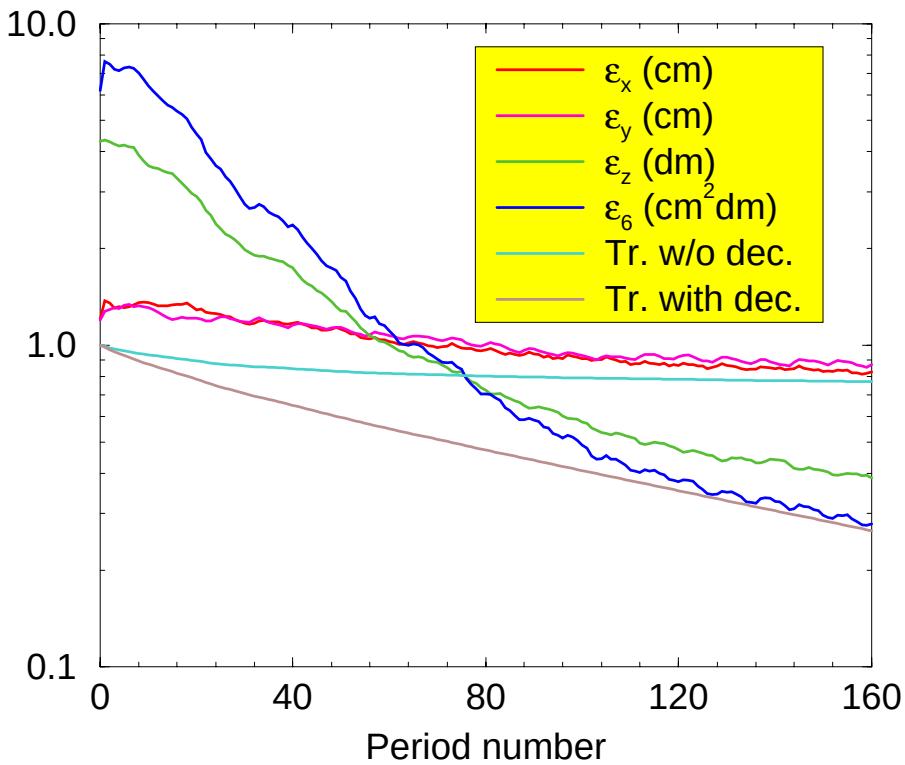


Number of turns	0	5	10	15	20
Horizontal emittance (cm)	1.2	1.1	0.88	0.80	0.76
Vertical emittance (cm)	1.2	1.1	0.95	0.86	0.83
Longitudinal emittance (cm)	43	14	5.7	3.7	3.1
6D emittance (cm^3)	63	17	4.7	2.6	2.0
Transmission without decay	1	0.84	0.80	0.78	0.77
Transmission with decay	1	0.65	0.47	0.35	0.26
Merit factor ($Tr \times \varepsilon_{6,ini}/\varepsilon_{6,fin}$)	1	2.4	6.3	8.7	8.6

Very close to two steps compressor.

02/26/02

Asymmetric octagonal compressor: RF at 7 long SS, LiH wedge absorbers 0.28 MeV/cm; 10 Kmuons



Number of turns	0	5	10	15	20
Horizontal emittance (cm)	1.2	1.2	0.97	0.86	0.83
Vertical emittance (cm)	1.2	1.2	1.0	0.92	0.87
Longitudinal emittance (cm)	43	17	7.2	4.7	3.9
6D emittance (cm^3)	62	23	7.1	3.8	2.8
Transmission without decay	1	0.85	0.80	0.78	0.77
Transmission with decay	1	0.65	0.47	0.35	0.27
Merit factor ($Tr \times \varepsilon_{6,ini}/\varepsilon_{6,fin}$)	1	1.7	4.2	5.9	5.9

Both decrease of average accelerating gradient and violation of symmetry make worse performances.