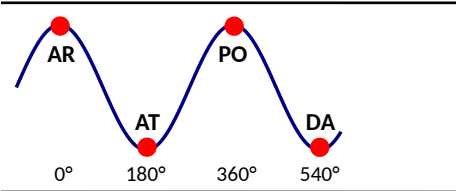
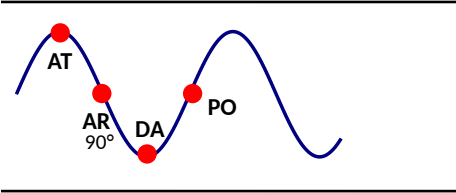
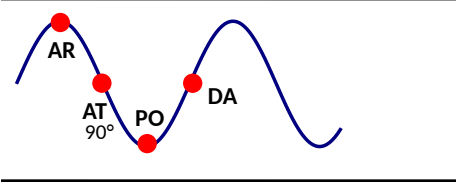
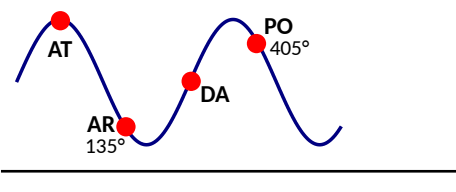
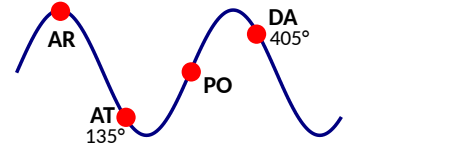


SwissFEL Kicker Options

Assumptions:

- Fixed period of resonant kicker (56 ns) – not possible to make faster.
- The only bunch spacing options are 14, 21 and 28 ns

	Bunch spacing / allocation	Evaluation	Comments / caveats
	<p>28 ns</p> <p>Status quo with four bunches, all on-crest</p>	<ul style="list-style-type: none"> ● Max. stability ● Max. tunability ● Max. energy loss ● Min. wakefield effect 	<ul style="list-style-type: none"> ● Simplest but highest energy loss. ● Second kicker needed for AT/DA!
	<p>14 ns</p> <p>Additionally using zero crossings to go straight.</p>	<ul style="list-style-type: none"> ● Min. stability for HXR ● Min. tunability ● Min. energy loss ● Max. wakefield effect 	<ul style="list-style-type: none"> ● Sufficient stability for AR/PO?
	<p>14 ns</p> <p>Additionally using zero crossings to go into the soft-X-ray branch</p>	<ul style="list-style-type: none"> ● Max. stability for HXR ● Min. tunability ● Min. energy loss ● Max. wakefield effect 	<ul style="list-style-type: none"> ● Second kicker needed for AT/DA! ● Sufficient stability for AT/DA? ● Reunification AR/PO
	<p>21 ns</p> <p>Compromise: one line on-crest, two lines close to on-crest (HXR), one line in the zero-crossing</p>	<ul style="list-style-type: none"> ● Varying stability ● Intermediate tunability ● Intermediate energy loss ● Intermediate wakefield effect 	<ul style="list-style-type: none"> ● Sufficient separation at 45°? ● Sufficient stability for AR/PO? ● Reunification AR/PO
	<p>21 ns</p> <p>Compromise: one line on-crest, two lines close to on-crest (SXR), one line in the zero-crossing</p>	<ul style="list-style-type: none"> ● Varying stability ● Intermediate tunability ● Intermediate energy loss ● Intermediate wakefield effect 	<ul style="list-style-type: none"> ● Sufficient separation at 45°? ● Sufficient stability for PO? ● Reunification AR/PO



Notes

- ...