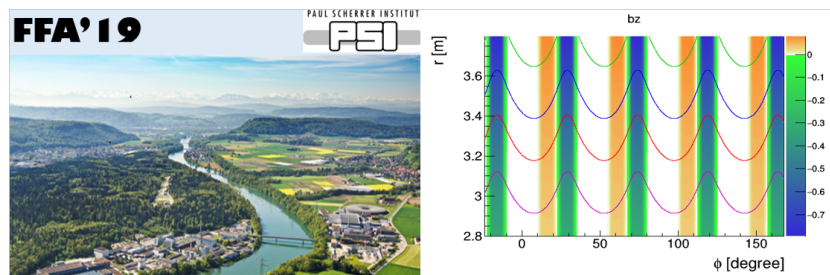


# International Workshop on Fixed Field alternating gradient Accelerators (FFA'19)



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## The CBETA project: arXiv:1706.04245

*Tuesday 19 November 2019 09:00 (45 minutes)*

The CBETA project [1] is the first and unique of its kind electron accelerator which combines two accelerator concepts together. The Energy Recovery Linac (ERL) and the Fixed Field Alternating Gradient (FFA\_G) concepts. The CBETA project is currently in the commissioning stage and some of the beam optics of the accelerator has been done using lamp-magnet methods to describe the fields of the FFAG magnets. Recently the zgoubi computer code is used to describe the beam optics of the accelerator during its acceleration and deceleration cycle. In this effort the zgoubi computer code is utilizing field maps of the permanent Halbach type of magnets of the FFA\_G section of the accelerator. These field maps have been derived using the OPERA computer code [3] which modeled the Halbach magnets. Two methods of modeling the Halbach magnets using the OPERA code will be described, and some results from the beam optics calculations will be presented.

[1] The CBETA project: arXiv:1706.04245

[2] Zgoubi code: <https://www.bnl.gov>

[3] The Opera code: <https://operafea.com/>

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