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## **Generalized Gradient Field Description Using the Bmad and PTC Toolkits**

*Wednesday, 10 May 2023 16:30 (2 hours)*

The Generalized Gradient (GG) formalism of Venturini and Dragt for describing static magnetic or electric fields has been implemented in the Bmad toolkit for accelerator simulations. In conjunction with this, a new method for calculating GG derivatives from a field table has been developed which avoids some of the problems of the Venturini and Dragt method. Generalized gradients are also implemented in the PTC toolkit developed by Etienne Forest which is interfaced to Bmad. This allows for construction of spin/orbital Taylor maps useful for nonlinear analysis and rapid tracking.

### **Funding Agency**

### **Footnotes**

### **I have read and accept the Privacy Policy Statement**

Yes

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