

## The KMD\_EMS System in Chinese Continuous Casting

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The KMD electromagnetic stirrer (KM\_EMS) has widely applications in the Chinese continuous casting industrial. We installed KMD\_EMS for the continuous casting in almost 80% steel plant in the China. In this paper, we present our KMD\_EMS's applications in China. Recent, we used GLGEO\_AGILD EMS modeling to simulate the magnetic filed distribution in our KMD\_EMS stirring in the continuous casting. According the GLGEO\_AGILD EMS simulation, we improve our KMD design and obtain more high quality stirring function and can reduce the cost for our stirring product. Many simulations show that GLGEO\_AGILD is accurate and fast. The magnetic field movie by GLGEO\_AGILD clearly shows that the rotational steel flow is driven by magnetic filed. There are MEMS, SEMS, and FEMS installed in the strand. The AGILD can be used for associate simulation of the magnetic field caused by the multiple stirrings that will be important real time tool to monitor the steel and metal continuous casting processes. In the near future, we will use new GLGEO\_AGILD EMS modeling to improve my real time control system and increase the efficiency of our KMD\_EMS. The GLGEO\_AGILD EMS modeling is new Advanced Global Integral and Local Differential electromagnetic stirring software that is mode and patented by GL GEOPHYSICAL Laboratory [1, 2]. The GLGEO\_AGILD EMS modeling challenges to FEM, FD, and Born like EM modeling for magnetic field in EMS. The GLGEO\_AGILD EMS modeling has excellent advantages over FEM, FD, and Born like modeling.

### REFERENCES

1. Xie, G. Q., J. H. Li, and F. Xie, "New global and local electromagnetic field modeling and inversion," *PIERS 2005*, Hangzhou, China, 2005.
2. Xie, G. Q., J. H. Li, and F. Xie, "Advanced GILD EM modeling and inversion," *Proceeding of PIERS 2005*, Hangzhou, China, 105–109, 2005.