Simulation of Electromagnetic Fields of Electromagnetic in Separator

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Electromagnetic Separator are high performance devices utilizing a powerful magnetic force for separation of magnetic foreign matter form raw material. Electromagnetic Separator is widely applied to metallurgical industry, mining industry, power industry, seaports, cement and construction material. Even in the developing industry jof garbage disposal, the separator is used to recover the iron and steel materials mixed in the scrap stock. The finite element program generating system FEPG is one of finite element method software, which can generate source program. Magnetic potential and magnetic density of magnetic field of Electromagnetic Separator have been studied. The results could help us to know the principle of Electromagnetic Separator well. However, there is still boundary condition and singularity treatment and large matrix cost in the FEM method. These historic difficult are overcame by AGILD and GL method. Recently Hunan KMD electrical company used GL geophysical Laboratory's AGILD and GL parallel electromagnetic modeling method for KMD stirring electromagnetic field simulation and obtained excellent result and obtained dynamic rotation magnetic imaging first in the world. We will use AGILD modeling for our Separator simulation

REFERENCES

1. Xie, G. Q., J. Li, and J. H. Li, "New AGILD EMS electromagnetic field Modeling," *Progress In Electromagnetics Research Symposium 2005*, Hangzhou, China, August 22-26, 2005.
2. Xie, G. Q., J. H. Li, E. Majer, D. Zuo, and M. Oristaglio, "3-D electromagnetic modeling and nonlinear inversion," *Geophysics*, Vol. 65, No. 3, 804, 2000.