	Characteristics of Lelièvre and Oldenburg's (2009) method	Characteristics of our method
Interpretation model consists of a user-specified grid of M juxtaposed prisms in the horizontal and vertical directions	Yes	No
Interpretation model consists of a user-specified set of a few dipoles	No	Yes
A large-scale forward model	Yes	No
Inversion method for estimating the magnetization vector of geological bodies	Yes	Yes
The Cartesian and Spherical formulations for estimating the magnetization vector	Yes	Yes
An underdetermined optimization approach	Yes	No
An overdetermined optimization approach	No	Yes
High degree of nonuniqueness (Ill-posed inverse problem)	Yes	No
The use of Tikhonov regularization to transform an ill-posed inverse problem into a well-posed one	Yes	No
The use of unorthodox procedure to reduce the nonuniqueness (e.g., removing padding cells)	Yes	No
A plethora of control parameters the prior information)	Yes	No
Inversion method that recovers the 3D magnetization vector distribution	Yes	No
Inversion method that presumes the shape of the geologic bodies	No	Yes
Inversion method that recovers a single magnetization direction per anomaly	No	Yes