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Hector Mendivil, Geo., M. Sc., RS/GIS, founder of Geo Digital Imaging de Mexico SA de CV, is a geologist with extensive experience in multi-spectral Remote Sensing, Geological Information Systems and 3D Geological Modeling. Mr. Mendivil has over 25 years of experience working in exploration mining companies at different areas and since 2010 is the Principal Consultant in Geo Digital Imaging de Mexico, a geological consultancy firm in Mexico. Mr. Mendivil has participated as author and co-author in more than 17 arbitered scientific publications.

" Implicit vs. Explicit Mineral Deposit 3D Modelling: Implications and repercussions in resource estimation"

Mineral deposits are naturally complex, three-dimensional bodies, making it necessary to apply complete geological sense in order to model them. Recognition of the geological-structural context, type and style of mineralization and the distribution of hydrothermal alteration is key to the understanding of the deposit and its subsequent economic evaluation.

Before the 80's the modeling of mineral deposits and geological systems was done entirely in 2D, including some interpretations in isometric paper-drawings or in CAD software. With the advance of computational technology in the field of geology, new ways to model mineral deposits came into play. Explicit modeling consists of interpretation through polygonal sections and plan maps using drilling data which are then joined three-dimensionally to form volumetric solid bodies. This technique combines computational agility using software to handle vector data and the ability of a human to interpret and draw bodies joining data between holes. As of the year 2000, the revolution towards implicit modeling began. This technique uses computational algorithms for interpolation and extrapolation of data to model three-dimensional bodies from information from holes or spatially located samples. Implicit modeling not only produces solid bodies with volume, but also calculates interpolated numerical values (like assays) within them. This form of modeling has now become the standard for modeling mineral deposits and geological systems; however, the intervention of the geologist remains indispensable and unavoidable to obtain a reliable model.

The combination between explicit and implicit modeling provides greater reliability than either of the two methods individually, thereby obtaining more accurate and logical geological models and more accurate resource estimates.