
MINH PHAM

PRESENT POSITION

Reservoir Engineering Manager

EXPERTISE

- Numerical reservoir simulation
- Geothermal well test analysis
- Wellbore modeling
- Heat transfer modeling
- Development of numerical simulation codes
- Training programs for geothermal reservoir engineers

EDUCATION

M.S. in Mechanical Engineering, San Jose State University, 1990

B.S. in Petroleum Engineering, University of California (Berkeley), 1989

EXPERIENCE

GeothermEx, Inc., 1991 - present

- Development of over 40 commercial numerical models of fields in California (Coso Hot Springs, East Mesa, Heber, Long Valley, Salton Sea, South Brawley, and The Geysers); Nevada (Blue Mountain, Dixie Valley, San Emidio, Stillwater, Steamboat, and Tuscarora); Hawaii (Puna); Utah (Roosevelt Hot Springs); Australia (Penola Trough); Costa Rica (Miravalles, and Las Pailas); Guatemala (Amatitlan); Indonesia (Muara Labuh, Raja Basa, Rantau Dedap, and Wayang Windu); Japan (Otake, Wasabizawa, and Uenotai); Jordan (Central Plain); Kenya (Olkaria I, Olkaria II, and Olkaria III); Mexico (Cerro Prieto, Los Azufres, Los Humeros, and Las Tres Virgenes); New Zealand (Kawerau); Nicaragua (San Jacinto); Norway (Statoil EGS); Portugal (Ribeira Grande); Turkey (Germencik); and United Arab Emirates (Abu Dhabi). These efforts all included initial-state modeling, history

matching and prediction of well and reservoir performance under various operating scenarios.

- Managing the assessment of the geothermal resource at Abu Dhabi, United Arab Emirates, 2010 to 2011.
- Managing the assessment of the geothermal resources at Hoi Van and Tubong, Central Vietnam, 2009 to 2011.
- Managing the assessment of the geothermal resource at Neal Hot Springs, Oregon, USA, 2009 to present.
- Development of the first-fully-integrated, field-wide simulation model of The Geysers field that included matching of 30 years of history of more than 600 wells (1992).
- Development of the first-ever coupled geothermal-mineral recovery simulation model, a combined power generation and lead-zinc-silver extraction at the South Brawley geothermal field, California. This technique was also used for modeling zinc recovery at the nearby Salton Sea geothermal field.
- Development of various software packages for geothermal reservoir engineering.
- Training of geothermal reservoir engineers in Central America and Japan. The short courses taught by Mr. Pham include:
 1. Fundamentals of geothermal reservoir numerical simulation, June 2015
 2. Fundamentals of geothermal numerical simulation, July 1998
 3. Effects of fluid injection in geothermal reservoirs, February 1995
 4. History matching and forecast modeling of geothermal reservoirs, September 1994
 5. Initial-state modeling of geothermal reservoirs, June 1994
 6. Theory and mechanics of numerical reservoir simulation, August 1992

Thermo Engineer, Lockheed Missiles & Space Company, Sunnyvale, California, 1989-1991

- Analyses of heat transfer and fluid dynamics for various components of the heat rejection system to be used in the Space Station, including the heat acquisition sub-system, the heat pipe radiator sub-system and the coolant delivery sub-system.
- Development of numerical simulation software to calculate the dynamics of multi-phase flow in porous media, and created numerical models of the Space Station heat rejection system using various aerospace industry simulators, including ATHENA and SINDA/FLUINT.

- Involvement in the design and testing of various components of the Advanced Tactical Fighter for the US Navy.

Assistant Engineer, NASA Ames Research Center, Mountain View, California, 1988-1989

- Designed the coating and performed heat transfer and fluid dynamics analyses on the Hard Space Suit AX-5 to be used in future planetary exploration missions.

MEMBERSHIPS

- Society of Petroleum Engineers
- American Society of Mechanical Engineers
- Tau Beta Pi

OTHER ACHIEVEMENTS

Winner of Geothermal Resources Council's "Best Paper Award" in 2001 (co-author)

CITIZENSHIP

USA

PUBLICATIONS

Numerical Modeling for Resource Management at Ribeira Grande, São Miguel, Azores, Portugal. Annual Meeting of the Geothermal Resources Council, 2009.

Conceptual Modeling and Tracer Testing at Ribeira Grande, São Miguel, Azores, Portugal. Annual Meeting of the Geothermal Resources Council, 2009.

Update Report and Expansion Strategy for the Los Azufres Geothermal Field. World Geothermal Congress, Antalya, Turkey, 2005.

Updated Numerical Simulation of the Miravalles Geothermal Field, Costa Rica. Annual Meeting of the Geothermal Resources Council, 2002.

Reactive Chemical Transport Simulation to Study Geothermal Production with Mineral Recovery and Silica Scaling. Annual Meeting of the Geothermal Resources Council, 2001.

Reducing the cost and environmental impact of geothermal power through modeling of chemical processes in the reservoir. The 26th Stanford Geothermal Workshop, Stanford, California, January 2001.

Numerical modeling of the Miravalles geothermal field, Costa Rica. World Geothermal Congress, Japan, May-June 2000.

Numerical simulation of the Wasabizawa geothermal field, Akita Prefecture, Japan. World Geothermal Congress, Japan, May-June 2000.

Numerical modeling of the high-temperature geothermal system of Amatitlán, Guatemala. Annual Meeting of the Geothermal Resources Council, 1996.

Analysis of well test data from the high-temperature geothermal system of Amatitlán, Guatemala. Annual Meeting of the Geothermal Resources Council, 1996.

Numerical modeling of the high-temperature, two-phase reservoir at Uenotai geothermal field, Akita Prefecture, Japan. World Geothermal Congress, Italy, 1995.

Analysis of the environmental impacts of the injection of treated municipal wastewater into a portion of The Geysers geothermal field, California, USA. The 16th PNOC-EDC Geothermal Conference, Philippines, 1995.

Results from a field-wide numerical model of The Geysers geothermal field, California. Annual Meeting of the Geothermal Resources Council, 1993.