

Title (en)  
SEQUENTIAL FULLY IMPLICIT WELL MODEL WITH TRIDIAGONAL MATRIX STRUCTURE FOR RESERVOIR SIMULATION

Title (de)  
SEQUENTIELLES VOLLSTÄNDIG IMPLIZITES BOHRLOCHMODELL MIT TRIDIAGONALER MATRIXSTRUKTUR FÜR RESERVOIRSIMULATION

Title (fr)  
MODÈLE DE PUIITS SÉQUENTIEL ENTIÈREMENT IMPLICITE AVEC STRUCTURE DE MATRICE TRIDIAGONALE POUR SIMULATION DE RÉSERVOIR

Publication  
**EP 3423672 A1 20190109 (EN)**

Application  
**EP 17711453 A 20170302**

Priority  
• US 201615061572 A 20160304  
• US 2017020318 W 20170302

Abstract (en)  
[origin: WO2017151838A1] A subsurface hydrocarbon reservoir with horizontal or multiple vertical wells is simulated by sequential solution of reservoir and well equations to simulate fluid flow inside the reservoir and well production rates. Sequential solution of reservoir and well equations treats wells as specified bottom hole pressure wells. This avoids solving large matrices resulting from the simultaneous solution of the reservoir and well equations which can be computationally very expensive for large number of unknowns and require special sparse matrix solvers. Such sequential solution involves regular reservoir system solvers complemented by a small matrix for the numerical solution of the well bottom hole pressures.

IPC 8 full level  
**E21B 41/00** (2006.01); **E21B 49/00** (2006.01)

CPC (source: EP)  
**E21B 49/00** (2013.01)

Citation (search report)  
See references of WO 2017151838A1

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**WO 2017151838 A1 20170908**; CA 3013807 A1 20170908; CA 3013807 C 20211116; CN 109072688 A 20181221; CN 109072688 B 20210511; EP 3423672 A1 20190109; SA 518392200 B1 20210915

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**US 2017020318 W 20170302**; CA 3013807 A 20170302; CN 201780015140 A 20170302; EP 17711453 A 20170302; SA 518392200 A 20180813