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## COMPOSITIONAL MODELING OF SHALE CONDENSATE GAS FLOW WITH MULTIPLE TRANSPORT MECHANISMS

Liu, L; Yao, J; Sun, H; Huang, Z; Yan, X; et al. **JOURNAL OF PETROLEUM SCIENCE & ENGINEERING** 172 : 1186-1201. (2019)

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**AB**  **Abstract (summary)** [Translate](#)

Shale condensate gas has gained great attention in recent years due to the production of profitable liquid hydrocarbons. The fluid flow in shale matrix is complex and influenced by multiple transport mechanisms, such as stress sensitivity, Knudsen diffusion, adsorption, molecular diffusion, and confined phase behavior. In addition, the coexistence of multiscale pore space, including hydraulic fractures, micro-fractures in simulated reservoir volume (SRV) and nanopores in matrix further increases the fluid flow complexity. Conventional models cannot commonly consider all the factors. In this work, we develop a hybrid model for condensate gas reservoir, where fluid flow is described by compositional model coupled with transport mechanisms, micro-fractures and hydraulic fractures are handled by multiple interacting continua (MINC) model and embedded discretized fracture model (EDFM). Then based on the proposed model, the effects of gas transport mechanisms on a multi-stage fractured horizontal well production are analyzed, where simulations are conducted with and without SRV to investigate the importance of SRV. Furthermore, some important reservoir parameters, such as SRV properties, hydraulic fracture length and bottom-hole pressure are also investigated with the proposed model. (c2018 Elsevier B.V.)

**Indexing (details)**

<b>SU</b>	<b>Subject</b>	COMPOSITIONAL MODEL (major); CUMULATIVE PRODUCTION (major); DATA (major); DIMENSIONLESS NUMBER (major); FRACTURED RESERVOIR (major); FRACTURED SHALE RESERVOIR (major); ...
<b>CC</b>	<b>Classification</b>	SC008: RESERVOIR ENGINEERING & RECOVERY METHOD
<b>TI</b>	<b>Title</b>	COMPOSITIONAL MODELING OF SHALE CONDENSATE GAS FLOW WITH MULTIPLE TRANSPORT MECHANISMS
<b>AU</b>	<b>Author</b>	Liu, L; Yao, J; Sun, H; Huang, Z; Yan, X; LI, L
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<b>LA</b>	<b>Language</b>	English
<b>SL</b>	<b>Language of abstract</b>	English
<b>DTYPE</b>	<b>Document type</b>	Article
<b>PUB</b>	<b>Publication title</b>	<a href="#">JOURNAL OF PETROLEUM SCIENCE &amp; ENGINEERING</a>
<b>SRC</b>	<b>Source details</b>	JOURNAL OF PETROLEUM SCIENCE & ENGINEERING v.172, pp.1186-1201, Jan. 2019. (ISSN 0920-4105)
<b>VO</b>	<b>Volume</b>	172
<b>PG</b>	<b>Pagination</b>	1186-1201
<b>ISSN</b>	<b>ISSN</b>	0920-4105
<b>PSTYP</b>	<b>Publication type</b>	Journal
<b>E</b>	<b>DOI</b>	<a href="https://doi.org/10.1016/j.petrol.2018.09.030">https://doi.org/10.1016/j.petrol.2018.09.030</a>
<b>DOI</b>	<b>URL</b>	<a href="http://www.sciencedirect.com/science/article/pii/S092041051830785X">http://www.sciencedirect.com/science/article/pii/S092041051830785X</a>
<b>PD,YR</b>	<b>Publication date</b>	2019
	<b>Source attribution</b>	Petroleum Abstracts, © Publisher specific
<b>AN</b>	<b>Accession number</b>	1393234
	<b>Document URL</b>	<a href="https://dialog.proquest.com/professional/docview/2183204835?accountid=174335">https://dialog.proquest.com/professional/docview/2183204835?accountid=174335</a>
<b>FAV</b>	<b>First available</b>	2019-02-19
<b>UD</b>	<b>Updates</b>	2019-02-19
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ISSN	ISSN	issn(0920-4105) issn(09204105)	Also searchable via the Look Up Citation tool.
Issue	ISS	iss(12)	Also searchable via the Look Up Citation tool.
Journal title	JN	jn(journal of petroleum science & engineering) jn.exact(petroleum) jn("journal of earth science")	Full journal name. Use double quotes or .exact to disambiguate names. A look-up list is available under Publication title.
Language	LA	la(spanish)	The language in which the document was originally published.
Major subject	MJSUB	mjsub("fractured reservoir")	Subjects which have major emphasis in the document.
Notes	NT	nt(earthdoc)	Notes on availability are sometimes provided.
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Inventor	INV	inv(girgenti)	
Patent publication country	PBC	pb(us) pb(eu)	
Patent number	PN	pn(1457639)	
Patent publication date	PDA	pda(20040915)	
Patent priority number	PRN	prn(us 271081) prn(us)	
Patent priority date	PRD	prd(1996-06-10) prd(19960610)	
Patent application date	PAD	pad(2007-07-26) pad(20070726)	
Patent assignee	AP	ap(halliburton)	
Publication date	PD	pd(2019) pd(>=20180101) pd(20181201-20190201)	Date range searching is supported.
Publication year	YR	yr(2019)	Publication year; occurs in all records.
Publication title <sup>1</sup>	PUB <sup>1</sup>	pub("marine and petroleum geology")	Name of the publication, including books, reports and other types in addition to journals.
Publication type	PSTYPE	pstype(journals)	The main publication types are journals, books, patents, reports and meetings
Report number	RP	rp(spe*) rp("ADSPE-44")	
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Database ISSN: 2475-1413

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