

arXiv.org > astro-ph > arXiv:1107.3505

from Gas-Dust Clouds

Aleksandr Nesterenok, Dmitry Varshalovich

(Submitted on 18 Jul 2011)

Astrophysics > High Energy Astrophysical Phenomena

## We gratefully acknowledge supp the Simons Fo and member ins

Search or Article-id

(Help | Advance

## **Download:**

• PDF only

Current browse cont astro-ph.HE < prev | next > new | recent | 1107

Change to browse b

astro-ph astro-ph.CO

## References & Citatio

- INSPIRE HEP
- (refers to | cited by)NASA ADS

Bookmark(what is this?)

Comments:	20 pages, 4 figures
Subjects:	High Energy Astrophysical Phenomena (astro-ph.HE); Cosmology and
	Extragalactic Astrophysics (astro-ph.CO)
Journal reference:	Astronomy Letters, 2011, Vol. 37, No. 7, pp. 456467
DOI:	10.1134/S1063773711070036
Cite as:	arXiv:1107.3505 [astro-ph.HE]
	(or arXiv:1107.3505v1 [astro-ph.HE] for this version)

H\_2^{16}O and H\_2^{18}O Maser Emission

The collisional pumping of H\_2^{16}O and H\_2^{18}O masers in hot dense gas-dust clouds has been simulated numerically. New data on the rate coefficients for collisional transitions from Faure et al.

H\_2^{16}O maser sources is investigated. The medium is shown to become optically thick in the H\_2^

{16}O lines for which an inverted level population is observed at H\_2O column densities of ~10^{19}-

10^{20} cm^{-2}. A simultaneous observation of H\_2^{18}O emission and H\_2^{16}O maser emission

in the same source will allow the physical conditions in the gas-dust cloud to be refined.

(2007) were used in the calculations. The possibility of detecting H\_2^{18}O emission in 22.2-GHz

## **Submission history**

From: Alexander Nesterenok [view email] [v1] Mon, 18 Jul 2011 17:10:41 GMT (1156kb)

Which authors of this paper are endorsers?

Link back to: arXiv, form interface, contact.