

Web of Science



Search Search Results

Tools Searches and alerts Search History Marked List

Full Text from Publisher



Save to EndNote online

Add to Marked List

◀ 1 of 2 ▶

Local Descriptions of Roots of Cubic Equations over P-adic Fields

By: Saburov, M (Saburov, Mansoor)^[1]; Ahmad, MAK (Ahmad, Mohd Ali Khameini)^[1]

BULLETIN OF THE MALAYSIAN MATHEMATICAL SCIENCES SOCIETY

Volume: 41 Issue: 2 Pages: 965-984

DOI: 10.1007/s40840-016-0401-8

Published: APR 2018

Document Type: Article

[View Journal Impact](#)

Abstract

One of the most frequently asked question in the p -adic lattice models of statistical mechanics is that whether a root of a polynomial equation belongs to domains or not. However, this question was open even for lower-degree polynomial equations. In this paper, we give local descriptions of roots of cubic equations over the p -adic fields for $P > 3$.

Keywords

Author Keywords: Cubic equation; p -adic field; Number of rootsKeyWords Plus: POTTS-MODEL; CAYLEY TREE; SOLVABILITY CRITERIA; QUADRATIC EQUATIONS; GIBBS MEASURES; MECHANICS; RESIDUES; NUMBER; $Q(3)$

Author Information

Reprint Address: Saburov, M (reprint author)

+ Int Islamic Univ Malaysia, Kuantan, Pahang, Malaysia.

Addresses:

+ [1] Int Islamic Univ Malaysia, Kuantan, Pahang, Malaysia

E-mail Addresses: msaburov@gmail.com

Funding

Funding Agency	Grant Number
MOHE Grant	ERGS13-025-0058

[View funding text](#)

Publisher

SPRINGER, 233 SPRING ST, NEW YORK, NY 10013 USA

Categories / Classification

Research Areas: Mathematics

Web of Science Categories: Mathematics

[See more data fields](#)

Citation Network

In Web of Science Core Collection

1

Times Cited

Create Citation Alert

All Times Cited Counts

1 in All Databases

[See more counts](#)

31

Cited References

[View Related Records](#)

Most recently cited by:

Ahmad, Mohd Ali Khameini; Liao, Lingmin; Saburov, Mansoor.
[Periodic \$p\$ -adic Gibbs Measures of \$q\$ -State Potts Model on Cayley Trees I: The Chaos Implies the Vastness of the Set of \$p\$ -Adic Gibbs Measures.](#)
 JOURNAL OF STATISTICAL PHYSICS (2018)

[View All](#)

Use in Web of Science

Web of Science Usage Count

0

Last 180 Days

0

Since 2013

[Learn more](#)

This record is from:

Web of Science Core Collection
- Science Citation Index Expanded[Suggest a correction](#)

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

◀ 1 of 2 ▶

Cited References: 31

1. **On Hensel's roots and a factorization formula in $Z[[x]]$** Times Cited: 1
 By: Birmajer, D.; Gil, J. B.; Weiner, M. D.
 Integers Volume: 14 Issue: A47 Published: 2014

2. Title: [not available] Times Cited: 636
 By: Borevich, ZI; Shafarevich, IR.
 Number theory Published: 1966
 Publisher: Academic Press, New York, London

3. **Solvability Criteria for the Equation $x(q) = a$ in the Field of p -adic Numbers** Times Cited: 2
 By: Casas, J. M.; Omirov, B. A.; Rozikov, U. A.
 BULLETIN OF THE MALAYSIAN MATHEMATICAL SCIENCES SOCIETY Volume: 37 Issue: 3 Pages: 853-863 Published: 2014

4. **ADELIC STRING AMPLITUDES** Times Cited: 250
 By: FREUND, PGO; WITTEN, E
 PHYSICS LETTERS B Volume: 199 Issue: 2 Pages: 191-194 Published: DEC 17 1987

5. **A MARVELOUS PROOF** Times Cited: 8
 By: GOUVEA, FQ
 AMERICAN MATHEMATICAL MONTHLY Volume: 101 Issue: 3 Pages: 203-222 Published: MAR 1994

6. **Untersuchung der Fundamentalgleichung einer Gattung für eine reelle Primzahl als Modul und Bestimmung der Theiler ihrer Discriminante** Times Cited: 15
 By: Hensel, K.
 J. Reine Angew. Math. Volume: 113 Pages: 61-83 Published: 1894

7. Title: [not available] Times Cited: 204
 By: Khrennikov, A. Yu.
 p -adic valued distributions in mathematical physics Published: 1994
 Publisher: Kluwer Acad. Publishers, Dordrecht

8. **P-ADIC QUANTUM-MECHANICS WITH P-ADIC VALUED FUNCTIONS** Times Cited: 95
 By: KHRENNIKOV, AY
 JOURNAL OF MATHEMATICAL PHYSICS Volume: 32 Issue: 4 Pages: 932-937 Published: APR 1991

9. Title: [not available] Times Cited: 166
 By: Koblitz, N.
 p -adicNumbers, p -adicAnalysis and Zeta Functions Published: 1984
 Publisher: Springer-Verlag

10. **ON THE P-ADIC 5-POINT FUNCTION** Times Cited: 73
 By: MARINARI, E; PARISI, G
 PHYSICS LETTERS B Volume: 203 Issue: 1-2 Pages: 52-54 Published: MAR 24 1988

11. **Solvability of cubic equations in p -ADIC integers ($p > 3$)** Times Cited: 14
 By: Mukhamedov, F. M.; Omirov, B. A.; Saburov, M. Kh.; et al.
 SIBERIAN MATHEMATICAL JOURNAL Volume: 54 Issue: 3 Pages: 501-516 Published: MAY 2013

12. **On cubic equations over p -adic fields** Times Cited: 14
 By: Mukhamedov, Farrukh; Omirov, Bakhrom; Saburov, Mansoor
 INTERNATIONAL JOURNAL OF NUMBER THEORY Volume: 10 Issue: 5 Pages: 1171-1190 Published: AUG 2014

13. **On equation $\chi(q) = a$ over $Q(p)$** Times Cited: 18
 By: Mukhamedov, Farrukh; Saburov, Mansoor
 JOURNAL OF NUMBER THEORY Volume: 133 Issue: 1 Pages: 55-58 Published: JAN 2013

14. Times Cited: 10

- Phase transition for the p-adic Ising-Vannimenus model on the Cayley tree**
 By: Mukhamedov, Farrukh; Dogan, Mutlay; Akin, Hasan
 JOURNAL OF STATISTICAL MECHANICS-THEORY AND EXPERIMENT Article Number: P10031 Published: OCT 2014
15. **Phase transitions for p-adic Potts model on the Cayley tree of order three** Times Cited: 9
 By: Mukhamedov, Farrukh; Akin, Hasan
 JOURNAL OF STATISTICAL MECHANICS-THEORY AND EXPERIMENT Article Number: P07014 Published: JUL 2013
16. **On Dynamical Systems and Phase Transitions for q+1-state p-adic Potts Model on the Cayley Tree** Times Cited: 30
 By: Mukhamedov, Farrukh
 MATHEMATICAL PHYSICS ANALYSIS AND GEOMETRY Volume: 16 Issue: 1 Pages: 49-87 Published: MAR 2013
17. **On Gibbs measures of P-adic Potts model on the cayley tree** Times Cited: 48
 By: Mukhamedov, FM; Rozikov, UA
 INDAGATIONES MATHEMATICAE-NEW SERIES Volume: 15 Issue: 1 Pages: 85-99 Published: MAR 29 2004
18. Title: [not available] Times Cited: 24
 By: Rosen, K. H.
 Elementary number theory and its applications Published: 2011
 Publisher: Pearson Addison Wesley
19. **Description of All Translation-Invariant p-Adic Gibbs Measures for the Potts Model on a Cayley Tree** Times Cited: 10
 By: Rozikov, U. A.; Khakimov, O. N.
 MARKOV PROCESSES AND RELATED FIELDS Volume: 21 Issue: 1 Pages: 177-204 Published: 2015
20. **Solvability and Number of Roots of Bi-Quadratic Equations over p-adic Fields** Times Cited: 5
 By: Saburov, M.; Ahmad, M. A. K.
 MALAYSIAN JOURNAL OF MATHEMATICAL SCIENCES Volume: 10 Special Issue: S Pages: 15-35 Part: 1 Published: FEB 2016
21. **On Descriptions of All Translation Invariant p-adic Gibbs Measures for the Potts Model on The Cayley Tree of Order Three** Times Cited: 6
 By: Saburov, Mansoor; Ahmad, Mohd Ali Khameini
 MATHEMATICAL PHYSICS ANALYSIS AND GEOMETRY Volume: 18 Issue: 1 Published: 2015
22. **Solvability Criteria for Cubic Equations over $Z(2)^*$** Times Cited: 7
 By: Saburov, Mansoor; Ahmad, Mohd Ali Khameini
 PROCEEDINGS OF THE 3RD INTERNATIONAL CONFERENCE ON MATHEMATICAL SCIENCES Book Series: AIP Conference Proceedings Volume: 1602 Pages: 792-797 Published: 2014
23. **The Number of Solutions of Cubic Equations over $Q(3)$** Times Cited: 4
 By: Saburov, Mansoor; Ahmad, Mohd Ali Khameini
 SAINS MALAYSIANA Volume: 44 Issue: 5 Pages: 765-769 Published: MAY 2015
24. **Solvability of Cubic Equations over $Q(3)$** Times Cited: 6
 By: Saburov, Mansoor; Ahmad, Mohd Ali Khameini
 SAINS MALAYSIANA Volume: 44 Issue: 4 Pages: 635-641 Published: APR 2015
25. **Quadratic equations over p-adic fields and their applications in statistical mechanics** Times Cited: 5
 By: Saburov, Mansoor; Ahmad, Mohd Ali Khameini
 SCIENCEASIA Volume: 41 Issue: 3 Pages: 209-215 Published: JUN 2015
26. **On the theory of cubic residues and nonresidues** Times Cited: 17
 By: Sun, ZH
 ACTA ARITHMETICA Volume: 84 Issue: 4 Pages: 291-335 Published: 1998
27. **Cubic and quartic congruences modulo a prime** Times Cited: 13
 By: Sun, ZH
 JOURNAL OF NUMBER THEORY Volume: 102 Issue: 1 Pages: 41-89 Published: SEP 2003
28. **Cubic residues and binary quadratic forms** Times Cited: 7
 By: Sun, Zhi-Hong

JOURNAL OF NUMBER THEORY Volume: 124 Issue: 1 Pages: 62-104 Published: MAY 2007

29. **MODELS OF SPACE AND TIME IN ELEMENTARY PHYSICS**

Times Cited: 8

By: VANDERBLIJ, F; MONNA, AF

JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS Volume: 22 Issue: 3 Pages: 537-+ Abstract Number: A1968-46075 Published: 1968

30. Title: [not available]

Times Cited: 407

By: Vladimirov, V.S.; Volovich, I.V.; Zelenov, E.I.

p-adic Analysis and Mathematical Physics Published: 1994

Publisher: World Scientific, Singapore

Showing 30 of 31 [View All in Cited References page](#)

Clarivate

Accelerating innovation

© 2019 Clarivate [Copyright notice](#) [Terms of use](#) [Privacy statement](#) [Cookie policy](#)

[Sign up for the Web of Science newsletter](#) [Follow us](#)

