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**Title:** The Z(6)-symmetric model partition function on triangular lattice

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**Source:** MALAYSIAN JOURNAL OF FUNDAMENTAL AND APPLIED SCIENCES **Volume:** 16 **Issue:** 3 **Pages:** 264-270 **Published:** MAY-JUN 2020

**Times Cited in Web of Science Core Collection:** 0

**Total Times Cited:** 0

**Usage Count (Last 180 days):** 0

**Usage Count (Since 2013):** 0

**Cited Reference Count:** 19

**Abstract:** There is a study on a square lattice that can predict the existence of multiple phase transitions on a complex plane. We extend the study on the different types of Z(Q)-symmetric model and different lattices in order to provide more evidence to the existence of multiple phase transitions. We focus on the Z(Q)-symmetric model with the nearest neighbour interaction on the six spin directions between molecular dipole, i.e. Q = 6 on a triangular lattice. Mainly, the model is defined on the triangular lattice graph with the nearest neighbour interaction. By using the transfer matrix approach, the partition functions are computed for increasing lattice sizes. The roots of polynomial partition function are also computed and plotted in the complex Argand plane. The specific heat equation is used for further comparison. The result supports the existence of the multiple phase transitions by the emergence of the multiple line curves in the locus of zeros distribution for specific type of energy level.

**Accession Number:** WOS:000541828800002

**Language:** English

**Document Type:** Article

**Author Keywords:** Statistical mechanics; Z(Q)-symmetric model; partition function; triangular lattice; phase transition

**KeyWords Plus:** CRYSTAL STATISTICS

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**Publisher:** PENERBIT UTM PRESS

**Publisher Address:** PENERBIT UTM PRESS, SKUDAI, JOHOR, 81310, MALAYSIA

**Web of Science Categories:** Multidisciplinary Sciences

**Research Areas:** Science & Technology - Other Topics

**IDS Number:** MA3PH

**ISSN:** 2289-5981

**eISSN:** 2289-599X

**29-char Source Abbrev.:** MALAYS J FUNDAM APPL

**ISO Source Abbrev.:** Malays. J. Fundam. Appl. Sci.

**Source Item Page Count:** 7

**Funding:**

| Funding Agency | Grant Number |
|---|---|
| Ministry of Education Malaysia FRGS Grant | FRGS/1/2019/STG06/UIAM/03/1<br>FRGS19-122-0731 |

This work was financially supported by the Ministry of Education Malaysia FRGS Grant, FRGS/1/2019/STG06/UIAM/03/1 (Project ID: FRGS19-122-0731).

**Output Date:** 2020-10-20

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