

## Prof. ERHAN ALBAYRAK

### Personal Information

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: AAL-8085-2021

ScopusID: 6603742224

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### Education Information

Doctorate, University of Massachusetts Lowell, Science Faculty, Physics/ General Physics, United States Of America 1993 - 1997

Postgraduate, University of Missouri-Columbia, Science Faculty, Physics/ General Physics, United States Of America 1991 - 1993

Undergraduate, Erciyes University, Fen-Edebiyat Fakültesi, Fizik, Turkey 1986 - 1990

### Foreign Languages

English, C1 Advanced

### Certificates, Courses and Trainings

Education Management and Planning, Eğitim Formasyonu, Erciyes Üniversitesi, 1990

### Dissertations

Doctorate, Computer Modeling For the Two- and Three-Dimensional Avalanche Photodiode, University Of Massachusetts Lowell, Science Faculty, Physics/ General Physics, 1997

Postgraduate, Absorption and Scattering from the Spherical Particles, University Of Missouri-Columbia, Science Faculty, Physics/ General Physics, 1993

### Research Areas

Physics, General Physics, Mathematical Methods in Physics, Condensed Matter 1: Structural, Mechanical and Thermal Properties, Equations of State, Phase Equilibria, and Phase Transitions, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties, Magnetic Properties and Materials, Natural Sciences

## Academic Titles / Tasks

Professor, Erciyes University, Fen Fakültesi, Fizik, 2009 - Continues  
Associate Professor, Erciyes University, Fen Fakültesi, Fizik, 2003 - 2009  
Assistant Professor, Erciyes University, Fen Fakültesi, Fizik, 1998 - 2003  
Lecturer PhD, Erciyes University, Fen Fakültesi, Fizik, 1997 - 1998  
Research Assistant, University of Massachusetts Lowell, Science Faculty, Physics, 1996 - 1997  
Research Assistant, University of Missouri-Columbia, Science Faculty, Physics, 1992 - 1993

## Academic and Administrative Experience

Erciyes University, 2011 - 2013  
Erciyes Üniversitesi, 2009 - 2013  
Erciyes Üniversitesi, 2009 - 2012  
Erciyes Üniversitesi, 2009 - 2012

## Courses

Dalgalar ve Titreşimler, Undergraduate, 2011 - 2012  
Kuantum Mekaniği I, Postgraduate, 2008 - 2009

## Advising Theses

ALBAYRAK E., The Obtaining of the Phase Diagrams for AFM/AFM and FM/AFM Cases of Spin-1 Ising Model on a Two-Layer Bethe Lattice, Doctorate, Ş.Akkaya(Student), 2011  
ALBAYRAK E., The Phase Diagrams of spin-1/2 Ising AFM/AFM ve FM/AFM Models on the Two-Layer Bethe Lattice with External Magnetic Field, Postgraduate, T.Cengiz(Student), 2010  
ALBAYRAK E., The Phase Diagrams of the Spin-(1/2,1,1/2) ve Spin-(1,1/2,1) Ising Models on the Bethe Lattice, Postgraduate, A.Aker(Student), 2010  
ALBAYRAK E., The Phase Diagrams of Spin-3/2 Ising Models for the AFM/AFM ve FM/AFM Cases on Two-layer Bethe Lattices, Doctorate, A.Yiğit(Student), 2010  
ALBAYRAK E., The Phase Diagrams for the Spin-(S=1/2, ?=1), Spin-(S=1, ?=3/2) and Spin-(S=3/2, ?=1/2) Ising Models on a Two-Layer Bethe Lattice, Postgraduate, T.Bulut(Student), 2008  
ALBAYRAK E., The Exact Phase Diagrams of the Spin-2 Ising model on a Two-Layer Bethe Lattice with and without Crystal Fields, Postgraduate, Ş.Akkaya(Student), 2007  
ALBAYRAK E., The Exact Phase Diagrams of the Spin-3/2 Ising model on a Two-Layer Bethe Lattice with and without Crystal Fields, Postgraduate, Ş.Yılmaz(Student), 2007  
ALBAYRAK E., The Critical Behaviors of the mixed spin-1 and spin-2 Blume-Capel Ising Ferromagnetic System, Postgraduate, A.Yiğit(Student), 2006  
ALBAYRAK E., The Analysis of mixed-spin spin-1/2 and spin-3/2 Ising System on the Bethe Lattice with Recursion Relations, Postgraduate, A.Alçı(Student), 2004  
ALBAYRAK E., The Analysis of Spin-1 Blume-Emery-Griffiths Model by Using the Recursion Relations on the Bethe Lattice, Postgraduate, Ö.Özkan(Student), 2002

## Published journal articles indexed by SCI, SSCI, and AHCI

- Hexagonal core-shell structure nanowire with high spins of spin-3/2 and spin-5/2**  
Karimou M., Yessoufou R. A., Albayrak E.  
CONDENSED MATTER PHYSICS, vol.27, no.2, pp.1-11, 2024 (SCI-Expanded)

- II. **Magnetic behaviors of diatomic molecules with mixed spin-1 and spin-1/2 on the Bethe lattice**  
ALBAYRAK E.  
Chinese Journal of Physics, vol.89, pp.1545-1554, 2024 (SCI-Expanded)
- III. **Monte Carlo and mean-field studies on the magnetic properties of a hexagonal Ising nanowire with core-shell structure in the Blume–Emery–Griffiths model**  
Aziza Goguin G., Yessoufou R., Oke T., ALBAYRAK E.  
Journal of Magnetism and Magnetic Materials, vol.598, 2024 (SCI-Expanded)
- IV. **The Dzyaloshinskii-Moriya interaction effects in antiferromagnetic Heisenberg model**  
ALBAYRAK E.  
International Journal of Modern Physics B, vol.38, no.6, 2024 (SCI-Expanded)
- V. **The XZ Model in the Mean-Field Approximation with Exponential Pauli Spin Matrices**  
ALBAYRAK E.  
SPIN, vol.14, no.1, 2024 (SCI-Expanded)
- VI. **Magnetic behavior of a diatomic molecule with spin-1 on the Bethe lattice**  
ALBAYRAK E.  
European Physical Journal Plus, vol.139, no.1, 2024 (SCI-Expanded)
- VII. **THE XYZ MODEL IN THE MEAN-FIELD APPROXIMATION IN TERMS OF PAULI SPIN MATRICES**  
ALBAYRAK E.  
LITHUANIAN JOURNAL OF PHYSICS, vol.64, no.1, pp.1-10, 2024 (SCI-Expanded)
- VIII. **SPIN-1 ANTIFERROMAGNETIC HEISENBERG MODEL INCLUDING DZYALOSHINSKII-MORIYA INTERACTION**  
ALBAYRAK E.  
ROMANIAN JOURNAL OF PHYSICS, vol.69, no.3-4, pp.9-17, 2024 (SCI-Expanded)
- IX. **Antiferromagnetic spin-3/2 Heisenberg model with the effects of Dzyaloshinskii-Moriya interaction**  
ALBAYRAK E.  
Modern Physics Letters B, vol.37, no.35, 2023 (SCI-Expanded)
- X. **Critical and hysteresis behaviors for a hexagonal core-shell structure nanowire in the Blume–Emery–Griffiths model**  
Goguin G. A., Oke T., Yessoufou R., ALBAYRAK E.  
Physica A: Statistical Mechanics and its Applications, vol.624, 2023 (SCI-Expanded)
- XI. **Effective field theory study of bond dilution effects on transverse Ising antiferromagnet in a random longitudinal magnetic field**  
Kple J., Hontinfinde F., ALBAYRAK E.  
Chinese Journal of Physics, vol.83, pp.467-479, 2023 (SCI-Expanded)
- XII. **Phase diagrams of spin-1 Blume-Capel model with bimodal random crystal and trimodal random magnetic fields**  
Yessoufou R. A. A., Seto G., Kpadonou A., ALBAYRAK E.  
INDIAN JOURNAL OF PHYSICS, vol.97, no.5, pp.1445-1454, 2023 (SCI-Expanded)
- XIII. **THE +/- J DISTRIBUTION IN THE MIXED SPIN-1/2 AND 5/2 BLUME-CAPEL MODEL**  
Albayrak E., Ozcan F. S.  
THEORETICAL AND MATHEMATICAL PHYSICS, vol.214, no.3, pp.421-431, 2023 (SCI-Expanded)
- XIV. **The XYZ model by the series expansion of exponentials for spin matrices in the mean-field approximation**  
ALBAYRAK E.  
European Physical Journal Plus, vol.138, no.3, 2023 (SCI-Expanded)
- XV. **Magnetic properties of the quaternary alloy with the mixtures of integer and half-integer spins**  
Kpadonou A., Yessoufou R., Houenou R., ALBAYRAK E.  
Phase Transitions, vol.96, no.1, pp.43-57, 2023 (SCI-Expanded)
- XVI. **Mixed-spin 1/2 and 3/2 core-shell structured triangular Ising nanowire on the Bethe lattice**  
ALBAYRAK E.  
International Journal of Modern Physics B, 2023 (SCI-Expanded)

- XVII. **Critical behaviors of transverse Ising ferromagnet with random bond and random longitudinal magnetic field**  
Kple J, Albayrak E, Oke T. D., Hontinfinde F.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.137, pp.1-11, 2022 (SCI-Expanded)
- XVIII. **Critical and hysteresis phenomena in the mixed spin-(3/2,1/2) anisotropic two-dimensional Heisenberg model: A Monte Carlo study**  
Seto G, Yessoufou R. A. A., Kpadonou A., ALBAYRAK E.  
PHYSICA A-STATISTICAL MECHANICS AND ITS APPLICATIONS, vol.604, 2022 (SCI-Expanded)
- XIX. **The spin-1 XYZ model with Dzyaloshinskii-Moriya interaction**  
Albayrak E.  
PHYSICA B-CONDENSED MATTER, vol.642, 2022 (SCI-Expanded)
- XX. **The numerical investigation of ferro-ferrimagnetic half-integer mixed spin ternary alloy: Monte-Carlo approach**  
Houenou R, Yessoufou R., Kpadonou A., Albayrak E.  
JOURNAL OF THE KOREAN PHYSICAL SOCIETY, vol.81, no.3, pp.247-257, 2022 (SCI-Expanded)
- XXI. **The Critical Properties of the Quaternary Alloy with Mixed Spin-(1,1/2,3/2,5/2): Mean Field Calculations**  
Yessoufou R., Kpadonou A., Houenou R., ALBAYRAK E.  
JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM, vol.35, no.7, pp.2047-2056, 2022 (SCI-Expanded)
- XXII. **Random Crystal and Magnetic Field Effects on Hysteresis Loops and Phase Transition of Blume-Capel Model in Cluster Variation Method**  
Yessoufou R. A. A., Kpadonou A., Seto G., Albayrak E.  
ACTA PHYSICA POLONICA A, vol.141, no.6, pp.634-641, 2022 (SCI-Expanded)
- XXIII. **The magnetic properties of mixed spin-[Formula presented] anisotropic Heisenberg model in the Oguchi approximation**  
Seto G., Kpadonou A., Yessoufou R., Albayrak E.  
Physica B: Condensed Matter, vol.634, 2022 (SCI-Expanded)
- XXIV. **Bimodal-random field Blume-Capel model in the cluster variation method**  
Yessoufou R. A. A., Albayrak E., Seto G.  
CHINESE JOURNAL OF PHYSICS, vol.77, pp.2713-2723, 2022 (SCI-Expanded)
- XXV. **Antiferromagnetic spin-1 XYZ model with the Dzyaloshinskii-Moriya interaction**  
Albayrak E.  
European Physical Journal Plus, vol.137, no.5, 2022 (SCI-Expanded)
- XXVI. **Random Crystal Field Effect on the Critical Properties of the Mixed Spin-(5/2,1/2) Anisotropic Heisenberg Model in the Oguchi Approximation**  
Seto G., Yessoufou R. A. A., Kpadonou A., Albayrak E.  
SPIN, vol.12, 2022 (SCI-Expanded)
- XXVII. **Random transverse single-ion anisotropies in the mixed spin-1 and spin-1/2 Blume-Capel quantum model: Mean-field theory calculations**  
Seto G., Yessoufou R., Kpadonou A., ALBAYRAK E.  
Pramana - Journal of Physics, vol.96, no.1, 2022 (SCI-Expanded)
- XXVIII. **Critical properties of the spin-1 Blume-Capel model with a random transverse crystal field**  
Kple J., Hontinfinde F., ALBAYRAK E.  
Physica B: Condensed Matter, vol.626, 2022 (SCI-Expanded)
- XXIX. **Ferromagnetic Heisenberg model with the Dzyaloshinskii-Moriya interaction**  
ALBAYRAK E.  
CONDENSED MATTER PHYSICS, vol.25, no.3, 2022 (SCI-Expanded)
- XXX. **Magnetic properties and phase diagrams of the mixed spin-(1/2,3/2) Ising-Heisenberg model in the mean field approximation**  
Seto G., Yessoufou R. A. A., Kpadonou A., ALBAYRAK E., Hontinfinde F.  
MODERN PHYSICS LETTERS B, vol.35, no.32, 2021 (SCI-Expanded)

- XXXI. **Effects of the random single-ion anisotropy on the spin-1 Blume-Emery-Griffiths model**  
Kple J., Hontinfinde F., ALBAYRAK E.  
Journal of Magnetism and Magnetic Materials, vol.537, 2021 (SCI-Expanded)
- XXXII. **The critical behaviors of a ferromagnetic-ferrimagnetic Ising ternary alloy with mixed spin- $(1/2, 3/2, 5/2)$**   
Houenou R., Yessoufou R., Kpadonou A., ALBAYRAK E.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.136, no.10, 2021 (SCI-Expanded)
- XXXIII. **Random transverse crystal-field effects on the magnetic properties of the spin-3/2 Blume-Capel model**  
Kple J., Hontinfinde F., ALBAYRAK E.  
PHYSICA B-CONDENSED MATTER, vol.619, 2021 (SCI-Expanded)
- XXXIV. **Exact Recursion Relation Approach to Spin-1 Two-Leg Ladder**  
Albayrak E.  
ACTA PHYSICA POLONICA A, vol.140, no.3, pp.273-280, 2021 (SCI-Expanded)
- XXXV.  **$\pm J$  Blume-Capel Model with external magnetic field in the cluster variation method**  
ALBAYRAK E.  
Physica A: Statistical Mechanics and its Applications, vol.575, 2021 (SCI-Expanded)
- XXXVI. **Trimodal-random field Blume-Capel model**  
ALBAYRAK E.  
MODERN PHYSICS LETTERS B, vol.35, no.16, 2021 (SCI-Expanded)
- XXXVII. **Random crystal field effects on antiferromagnetic spin-1 Blume-Capel model**  
Albayrak E.  
Modern Physics Letters B, vol.35, no.2150286, pp.2150286, 2021 (SCI-Expanded)
- XXXVIII. **The thermal properties of the mixed spin-1/2, 1, 3/2 Ising model on the Bethe lattice**  
Kple J., Albayrak E., Hontinfinde F.  
MODERN PHYSICS LETTERS B, vol.35, no.4, 2021 (SCI-Expanded)
- XXXIX. **Anisotropic Heisenberg model for the mixed spin-3/2 and spin-1/2 under random crystal field**  
Takou D. S., Karimou M., Hontinfinde F., Albayrak E.  
CONDENSED MATTER PHYSICS, vol.24, no.1, 2021 (SCI-Expanded)
- XL. **The random field Blume-Capel model on the Bethe lattice**  
Albayrak E.  
Chinese Journal of Physics, vol.68, pp.100-105, 2020 (SCI-Expanded)
- XLI. **The study of mixed spin-1 and spin-1/2: Entropy and isothermal entropy change**  
ALBAYRAK E.  
Physica A: Statistical Mechanics and its Applications, vol.559, 2020 (SCI-Expanded)
- XLII. **Staggered Quadrupolar Phase in the Bond-Diluted Spin-1 Blume-Emery-Griffiths Model**  
Kple J., Hontinfinde F., Albayrak E.  
INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS, vol.59, no.12, pp.3915-3935, 2020 (SCI-Expanded)
- XLIII. **The critical behaviors of the mixed spin-1/2 and spin-2 model in a random crystal field**  
Barut O., Yigit A., Albayrak E.  
Journal of Magnetism and Magnetic Materials, vol.513, 2020 (SCI-Expanded)
- XLIV. **Spin-1 Ising model with nearest and next-nearest bilinear and biquadratic interactions on the Bethe lattice**  
ALBAYRAK E.  
Physica B: Condensed Matter, vol.594, 2020 (SCI-Expanded)
- XLV. **Mixed Spin-1/2 and 5/2 Blume-Capel Model on the Bethe Lattice in the  $\pm J$  Distribution with an Adjusting Parameter**  
ALBAYRAK E., Ozcan F. S.  
Journal of Superconductivity and Novel Magnetism, vol.33, no.7, pp.2179-2188, 2020 (SCI-Expanded)
- XLVI. **Antiferromagnetic Spin-3/2 Ising Model Under the Influence of Random Crystal Field**  
Kaman R., Yigit A., ALBAYRAK E.

- BRAZILIAN JOURNAL OF PHYSICS, vol.50, no.3, pp.245-253, 2020 (SCI-Expanded)
- XLVII. **Triple mixed-spin Ising model**  
ALBAYRAK E.  
International Journal of Modern Physics B, vol.34, no.13, 2020 (SCI-Expanded)
- XLVIII. **The Ising model with nearest- and next-nearest-neighbor interactions on the Bethe lattice: The exact recursion relations**  
ALBAYRAK E.  
MODERN PHYSICS LETTERS B, vol.34, no.10, 2020 (SCI-Expanded)
- XLIX. **Isothermal Entropy Change for the Spin-1 Blume-Capel Model on the Bethe Lattice**  
Albayrak E.  
INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS, 2019 (SCI-Expanded)
- L. **The mixed spin-1/2 and spin-1 model with alternating coordination number**  
ALBAYRAK E.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS B, vol.33, no.11, 2019 (SCI-Expanded)
- LI. **Phase diagrams and critical behaviours of the mixed spin-5/2 and spin-7/2 Ising system**  
Karimou M., Yessoufou R. A., Ngantso G. D., Hontinfinde F., ALBAYRAK E.  
CONDENSED MATTER PHYSICS, vol.22, no.3, 2019 (SCI-Expanded)
- LII. **The ferri-ferro-ferrimagnetic quaternary alloy**  
Albayrak E.  
PHYSICA B-CONDENSED MATTER, vol.552, pp.71-77, 2019 (SCI-Expanded)
- LIII. **The Amorphous Spin-1 Ising Model on the Bethe Lattice**  
ALBAYRAK E.  
ACTA PHYSICA POLONICA A, vol.134, no.6, pp.1176-1179, 2018 (SCI-Expanded)
- LIV. **The Random Change of Coordination Number in the Blume-Capel Model**  
ALBAYRAK E.  
JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM, vol.31, no.11, pp.3595-3599, 2018 (SCI-Expanded)
- LV. **The random distribution of the coordination numbers in the mixed spin-1/2 and spin-2 Blume-Capel model**  
ALBAYRAK E.  
CHINESE JOURNAL OF PHYSICS, vol.56, no.5, pp.2291-2296, 2018 (SCI-Expanded)
- LVI. **Phase diagrams of the random nearest-neighbor mixed spin-1/2 and spin-3/2 Blume-Capel model**  
ALBAYRAK E.  
MODERN PHYSICS LETTERS B, vol.32, no.27, 2018 (SCI-Expanded)
- LVII. **The quaternary alloy on the Bethe lattice**  
ALBAYRAK E.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS B, vol.32, no.21, 2018 (SCI-Expanded)
- LVIII. **The magnetic phase diagrams of the ternary alloy AB(p)C(1-p) on the Bethe lattice**  
ALBAYRAK E.  
MODERN PHYSICS LETTERS B, vol.32, no.16, 2018 (SCI-Expanded)
- LIX. **Spin-1/2 Ising model on a AFM/FM two-layer Bethe lattice in a staggered magnetic field**  
KPLE J., MASSOU S., HONTINFINDE F., ALBAYRAK E.  
CHINESE JOURNAL OF PHYSICS, vol.56, no.3, pp.1252-1261, 2018 (SCI-Expanded)
- LX. **The crystal-field dependency of sound attenuation in the spin-3/2 ising model**  
Cengiz T., ALBAYRAK E.  
CHINESE JOURNAL OF PHYSICS, vol.56, no.3, pp.844-852, 2018 (SCI-Expanded)
- LXI. **Random crystal field effects on the integer and half-integer mixed-spin system**  
Yigit A., ALBAYRAK E.  
Superlattices and Microstructures, vol.117, pp.65-71, 2018 (SCI-Expanded)
- LXII. **The single-ion anisotropy effects in the mixed-spin ternary-alloy**  
ALBAYRAK E.  
Physics Letters, Section A: General, Atomic and Solid State Physics, vol.382, no.13, pp.880-886, 2018 (SCI-

Expanded)

- LXIII. **The spin-1 Blume–Capel model on the Bethe lattice in  $\pm J$  distribution with an adjustable parameter between FM and AFM phases**  
ALBAYRAK E.  
Chinese Journal of Physics, vol.56, no.2, pp.622-629, 2018 (SCI-Expanded)
- LXIV. **The Mixed Spin-1/2 and Spin-1 Ising-Heisenberg Model in the Mean-Field Approximation: a New Approach**  
ALBAYRAK E.  
CHINESE PHYSICS LETTERS, vol.35, no.3, 2018 (SCI-Expanded)
- LXV. **Random Crystal Field Effects on the Mixed-Spin 1/2 and 5/2 Blume-Capel Model**  
ALBAYRAK E., KARIMOU M.  
INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS, vol.57, no.3, pp.715-725, 2018 (SCI-Expanded)
- LXVI. **The phase diagrams of the mixed-spin ternary-alloy consisting of half-integer spins: Standard-random approach**  
ALBAYRAK E.  
Physica B: Condensed Matter, vol.531, pp.70-74, 2018 (SCI-Expanded)
- LXVII. **The bimodal random crystal field and biquadratic exchange interaction effects for the spin-3/2 Ising model on the Bethe lattice**  
KARIMOU M., ALBAYRAK E., TESSILIMY A., HONTINFINDE F., YESSOUFOU R.  
CHINESE JOURNAL OF PHYSICS, vol.55, no.6, pp.2371-2383, 2017 (SCI-Expanded)
- LXVIII. **Anisotropic Heisenberg model for the mixed spin-2 and spin-1/2 in the Oguchi approximation on the simple cubic lattice**  
ALBAYRAK E.  
PHYSICA A-STATISTICAL MECHANICS AND ITS APPLICATIONS, vol.486, pp.161-167, 2017 (SCI-Expanded)
- LXIX. **Equal Random Crystal Field of Mixed Spin-1 and Spin-3/2 System**  
Yigit A., ALBAYRAK E.  
JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM, vol.30, no.11, pp.3103-3108, 2017 (SCI-Expanded)
- LXX. **Bond Dilution Effects on Bethe Lattice the Spin-1 Blume-Capel Model**  
Albayrak E.  
COMMUNICATIONS IN THEORETICAL PHYSICS, vol.68, no.3, pp.361-365, 2017 (SCI-Expanded)
- LXXI. **Mixed Spin-2 and Spin-1/2 Anisotropic Heisenberg Model in the Oguchi Approximation**  
ALBAYRAK E.  
JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM, vol.30, no.9, pp.2555-2561, 2017 (SCI-Expanded)
- LXXII. **The +/- J model for the mixed-spin 1/2 and 5/2 system**  
ALBAYRAK E., KARIMOU M.  
CHINESE JOURNAL OF PHYSICS, vol.55, no.4, pp.1361-1368, 2017 (SCI-Expanded)
- LXXIII. **Square Ising Nanowire on the Bethe Lattice**  
ALBAYRAK E.  
ACTA PHYSICA POLONICA A, vol.131, no.6, pp.1470-1473, 2017 (SCI-Expanded)
- LXXIV. **Magnetic phase diagrams of Fe-Mn-Al alloy on the Bethe lattice**  
ALBAYRAK E.  
CHINESE PHYSICS B, vol.26, no.2, 2017 (SCI-Expanded)
- LXXV. **+/- J Blume-Capel model in the cluster variation method**  
ALBAYRAK E.  
CHINESE JOURNAL OF PHYSICS, vol.54, no.6, pp.978-982, 2016 (SCI-Expanded)
- LXXVI. **The Random J-Model with Biquadratic Interaction**  
Yigit A., ALBAYRAK E.  
JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM, vol.29, no.10, pp.2535-2541, 2016 (SCI-Expanded)
- LXXVII. **The +/- J model for the mixed-spin 1/2 and 3/2 Blume-Capel model**  
ALBAYRAK E.  
PHYSICA B-CONDENSED MATTER, vol.494, pp.91-95, 2016 (SCI-Expanded)

- LXXVIII. **Core-shell structured square mixed-spin 1 and 1/2 Ising nanowire on the Bethe lattice**  
ALBAYRAK E.  
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol.401, pp.532-538, 2016 (SCI-Expanded)
- LXXIX. **Core-shell structured triangular Ising nanowire on the Bethe lattice**  
ALBAYRAK E.  
PHYSICS LETTERS A, vol.380, no.3, pp.458-464, 2016 (SCI-Expanded)
- LXXX. **Random Blume-Emery-Griffiths model on the Bethe lattice**  
Albayrak E.  
PHYSICA B-CONDENSED MATTER, vol.479, pp.107-111, 2015 (SCI-Expanded)
- LXXXI. **The phase diagrams of the +/- K model on the Bethe lattice**  
Albayrak E.  
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol.386, pp.20-24, 2015 (SCI-Expanded)
- LXXXII. **The Effects of the Random Transverse Crystal Field on the Spin-1 Model**  
Albayrak E.  
ACTA PHYSICA POLONICA A, vol.127, no.3, pp.818-822, 2015 (SCI-Expanded)
- LXXXIII. **+/- J model on the Bethe lattice with crystal field interaction**  
Albayrak E.  
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol.355, pp.18-21, 2014 (SCI-Expanded)
- LXXXIV. **Phase diagrams of the spin-3/2 random transverse crystal field model**  
Albayrak E.  
PHYSICA SCRIPTA, vol.89, no.1, 2014 (SCI-Expanded)
- LXXXV. **Phase diagrams of spin-3/2 Ising model in the presence of random crystal field within the effective field theory based on two approximations**  
Yigit A., ALBAYRAK E.  
CHINESE PHYSICS B, vol.22, no.10, 2013 (SCI-Expanded)
- LXXXVI. **Mixed spin-1/2 and spin-3/2 Ising model with random crystal field distribution**  
Yigit A., ALBAYRAK E.  
PHYSICA A-STATISTICAL MECHANICS AND ITS APPLICATIONS, vol.392, no.19, pp.4216-4221, 2013 (SCI-Expanded)
- LXXXVII. **Spin-1 Blume-Capel model with longitudinal random crystal and transverse magnetic fields: A mean-field approach**  
Albayrak E.  
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- LXXXVIII. **THE QUANTUM REFRIGERATOR IN A TWO-QUBIT XXZ HEISENBERG MODEL**  
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**LX. Coarse Grid Finite Difference Solution of Maxwell s Equations for a Model of An Avalanche Photodischarge Device**

ALBAYRAK E., Martin W.

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### **Other Publications**

**I. ERRATUM: "Critical and Compensation Temperatures of The Ising Bilayer System Consisting of Spin-1/2 and Spin-1 Atoms", J. Stat. Phys. 130 (2008) 829**

ALBAYRAK E.

Other, pp.829, 2008

### **Supported Projects**

ALBAYRAK E., Project Supported by Higher Education Institutions, Dörtlü Alaşımın Bethe Kafesi Üzerinde Tasarımı ve Faz Diyagramları, 2018 - 2019

ALBAYRAK E., Project Supported by Higher Education Institutions, Oguchi Yaklaşımında Karma Spin-2 ve Spin-12 Anisotropic Heisenberg Modelinin Manyetik Faz Diyagramları, 2016 - 2017

ALBAYRAK E., CENGİZ T., Project Supported by Higher Education Institutions, Spin-3/2 Ising Modelinde Ses Dalgalarındaki Sönümün Bethe Kafesindeki İncelenmesi, 2011 - 2013

ALBAYRAK E., Project Supported by Other Official Institutions, Eşit ve eşit olmayan kristal Alan Varlığında Karma Spin-1 ve Spin-5/2 Ising Modelinin Bethe Kafesi Üzerinde Kritik Özelliklerinin Araştırılması, 2011 - 2013

ALBAYRAK E., BULUT T., Project Supported by Higher Education Institutions, İKİ TABAKALI BETHE KAFESİNDE KARMA SPİN-S ( $S = 1/2, 1, 3/2$ ) VE SPİN-? ( $? = 1, 3/2, 1/2$ ) İSİNG MODELİNİN KRİSTAL ALAN YOKLUĞUNDA KESİN FAZ DİAGRAMLARI, 2007 - 2009

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## Metrics

Publication: 232

Citation (WoS): 1448

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H-Index (Scopus): 21

## Congress and Symposium Activities

The Effective Field Treatment of Spin-3/2 Ising Model with a Special Random Crystal Field Distribution, Attendee, İstanbul, Turkey, 2012

The Bethe Lattice Treatment of Ultrasonic Attenuation (POSTER), Attendee, Amsterdam, Netherlands, 2012

The Effect of External Magnetic Field on Sound Attenuation of the Spin-3/2 Ising Model (POSTER), Attendee, Amsterdam, Netherlands, 2012

The Critical Properties of Mixed Spin-1 and Spin-5/2 with Equal and Unequal Crystal Fields (POSTER), Attendee, Amsterdam, Netherlands, 2012

Bethe Lattice Study of the Mixed Spin-2 and Spin-5/2 Ising Model, Attendee, İstanbul, Turkey, 2011

The Mixed-spin Ternary-alloy in the Form of ABpC1-p on the Bethe Lattice, Attendee, İstanbul, Turkey, 2011

The Sound Attenuation for the Spin-1 Ising Model on the Bethe Lattice, Attendee, İstanbul, Turkey, 2011

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The Ising on a Bilayer Bethe Lattice with AFM/AFM Interactions for Spin-3/2, Attendee, Bodrum, Turkey, 2008

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Mixed Spin-3/2 and Spin-5/2 Ising System on the Bethe Lattice, Attendee, Malatya, Turkey, 2007

The Spin-1 and Spin-3/2 Model on a Bilayer Bethe Lattice with Crystal Field, Attendee, Malatya, Turkey, 2007

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Mixed Spin-1/2 and spin-1 Blume-Capel model on the Bethe Lattice using the recursion method, Attendee, İstanbul, Turkey, 2002

The Spin-3/2 Blume-Emery-Griffiths model on the Bethe Lattice using the recursion method, Attendee, İstanbul, Turkey, 2001

The Spin-3/2 Blume-Capel model on the Bethe Lattice using the recursion method, Attendee, İstanbul, Turkey, 2000

Phase diagram of the Blume-Emery-Griffiths model on the simple cubic lattice calculated by the linear chain approximation, Attendee, İstanbul, Turkey, 1999

Phase diagrams of the Blume-Emery-Griffiths model calculated by the mean-field approximation including the transverse fields effects, Attendee, İstanbul, Turkey, 1998

Coarse Grid Finite Difference Solution of Maxwell's Equations for a Model of An Avalanche Photodischarge Device (POSTER), Attendee, New England, United States Of America, 1997

## Scholarships

Turkish Ministry of Education Scholarship for the Ph. D. Degree in the USA., Ministry of Education, 1993 - Continues

Turkish Ministry of Education Scholarship for the M.Sc Degree in the USA., Ministry of Education, 1990 - Continues

## Awards

ALBAYRAK E., Erciyes University Scientific Publication Honorary Reward, Erciyes Üniversitesi, September 2007

ALBAYRAK E., Erciyes University Scientific Publication Honorary Reward, Erciyes Üniversitesi, September 2002

## Non Academic Experience

Erciyes Üniversitesi