Prof. ATALAY KARASU

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Education Information

Doctorate, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, Turkey 1983 - 1988
Postgraduate, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, Turkey 1980 - 1983
Undergraduate, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, Turkey 1975 - 1980

Dissertations

Doctorate, Stationary, Axi-symmetric Einstein Field Equations in Higher Dimensions: HarmonicMappings, Uniqueness of Solutions and Inverse Scattering Transform Technique,, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 1988
Postgraduate, The Configuration Space of Stationary Axially Symmetric Einstein–Maxwell Fields,, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 1983

Research Areas

Physics, Mathematical Methods in Physics, Relativity and Gravitation, Natural Sciences

Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2002 - Continues
Associate Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 1991 - 2002
Visiting Lecturer, Ihsan Dogramaci Bilkent University, Faculty Of Science, Department Of Physics, 1991 - 1992
Assistant Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 1990 - 1991
Research Assistant, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 1982 - 1990

Advising Theses

KARASU A., Commutative and non-commutative integrable equations: Lax pairs, recursion operators, Postgraduate,

G.ÜNAL(Student), 2011

KARASU A., Color engineering of π-conjugated donor-acceptor systems : the role of donor and acceptor units on the neutral state color, Postgraduate, G.Ünal(Student), 2011

KARASU A., Black hole collisions at the speed of light, Doctorate, Ç.ŞENTÜRK(Student), 2010

KARASU A., Einstein aether gravity, Postgraduate, E.AKBABA(Student), 2009

KARASU A., Collision of gravitational waves: Axisymmetric PP waves, Postgraduate, A.EMRE(Student), 2007

KARASU A., Colliding gravitational plane waves: Bell-szekeres solution, Postgraduate, E.CAMBAZ(Student), 2005

KARASU A., Gödel's metric and its generalization, Postgraduate, K.ÖZGÖREN(Student), 2005

KARASU A., Higher dimensional Bell-Szekeres metric, Postgraduate, Ç.ŞENTÜRK(Student), 2003

KARASU A., A class of super integrable Korteweg-de Vries systems, Postgraduate, H.DAĞ(Student), 2003

KARASU A., Higher dimensional metrics of colliding gravitational plane waves, Postgraduate, E.ONUR(Student), 2002

KARASU A., Higher dimensional metrics of colliding gravitaonal plane waves., Postgraduate, O.Emre(Student), 2002

KARASU A., Integrable nonautonomous KDV systems, Doctorate, R.TURHAN(Student), 2002

KARASU A., Physical principles of musical scales: Complexity criteria, Postgraduate, G.İSMAİL(Student), 2001

KARASU A., A Class of coupled korteweg-de Vries systems and their bi-hamiltonion formulations, Postgraduate, A.GÜNHAN(Student), 2000

KARASU A., A class coupled Korteweg - DE Vries systems and their Bi-Hamiltonian Formulations, Postgraduate, A.Can(Student), 2000

KARASU A., A Method for the classification of integrable evolution equations, Postgraduate, R.TURHAN(Student), 1997

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Minimal extension of Einstein's theory: The quartic gravity**
KARASU A., Kenar E., TEKİN B.
PHYSICAL REVIEW D, vol.93, no.8, 2016 (SCI-Expanded)

II. **ON NON-COMMUTATIVE INTEGRABLE BURGERS EQUATIONS**
GÜRSES M., KARASU A., TURHAN R.
JOURNAL OF NONLINEAR MATHEMATICAL PHYSICS, vol.17, no.1, pp.1-6, 2010 (SCI-Expanded)

III. **A new integrable generalization of the Korteweg-de Vries equation**
Karasu-Kalkanli A., KARASU A., Sakovich A., Sakovich S., TURHAN R.
JOURNAL OF MATHEMATICAL PHYSICS, vol.49, no.7, 2008 (SCI-Expanded)

IV. **Gardner's deformations of the Boussinesq equations**
Karasu A., Kiselev A. V.
JOURNAL OF PHYSICS A-MATHEMATICAL AND GENERAL, vol.39, no.37, pp.11453-11460, 2006 (SCI-Expanded)

V. **Closed timelike curves and geodesics of Godel-type metrics**
Gleiser R., Gurses M., Karasu A., Sarioglu O.
CLASSICAL AND QUANTUM GRAVITY, vol.23, no.7, pp.2653-2663, 2006 (SCI-Expanded)

VI. **Godel-type metrics in various dimensions**
Gurses M., Karasu A., Sarioglu O.
CLASSICAL AND QUANTUM GRAVITY, vol.22, no.9, pp.1527-1543, 2005 (SCI-Expanded)

VII. **A strange recursion operator for a new integrable system of coupled Korteweg-de Vries equations**
Karasu A., Karasu A., Sakovich S.
ACTA APPLICANDAE MATHEMATICAE, vol.83, pp.85-94, 2004 (SCI-Expanded)

VIII. **Higher dimensional Bell-Szekeres metric**
Gurses M., Ipekoglu Y., Karasu A., Senturk C.
Physical Review D, vol.68, no.8, 2003 (SCI-Expanded)

IX. **Higher dimensional metrics of colliding gravitational plane waves**
Gurses M., Kahya E., Karasu A.
PHYSICAL REVIEW D, vol.66, no.2, 2002 (SCI-Expanded)

X. **Time-dependent recursion operators and symmetries**

Gurses M., Karasu A., Turhan R.

JOURNAL OF NONLINEAR MATHEMATICAL PHYSICS, vol.9, no.2, pp.210-228, 2002 (SCI-Expanded)

XI. **Non-autonomous Svinolupov-Jordan KdV systems**

Gurses M., Karasu A., Turhan R.

JOURNAL OF PHYSICS A-MATHEMATICAL AND GENERAL, vol.34, no.28, pp.5705-5711, 2001 (SCI-Expanded)

XII. **Integrability of a generalized Ito system: The Painleve test**

Karasu-Kalkanli A., Karasu A., Sakovich S.

JOURNAL OF THE PHYSICAL SOCIETY OF JAPAN, vol.70, no.5, pp.1165-1166, 2001 (SCI-Expanded)

XIII. **Some higher-dimensional vacuum solutions**

Gurses M., Karasu A.

CLASSICAL AND QUANTUM GRAVITY, vol.18, no.3, pp.509-516, 2001 (SCI-Expanded)

XIV. **On construction of recursion operators from Lax representation**

Gurses M., Karasu A., Sokolov V.

JOURNAL OF MATHEMATICAL PHYSICS, vol.40, no.12, pp.6473-6490, 1999 (SCI-Expanded)

XV. **Comment: On a recently proposed relation between oHS and Ito systems**

Karasu A.

PHYSICS LETTERS A, vol.259, no.2, pp.168-170, 1999 (SCI-Expanded)

XVI. **Integrable KdV systems: Recursion operators of degree four**

Gurses M., Karasu A.

PHYSICS LETTERS A, vol.251, no.4, pp.247-249, 1999 (SCI-Expanded)

XVII. **Integrable coupled KdV systems**

Gurses M., Karasu A.

JOURNAL OF MATHEMATICAL PHYSICS, vol.39, no.4, pp.2103-2111, 1998 (SCI-Expanded)

XVIII. **Degenerate Svinolupov KdV systems**

Gurses M., Karasu A.

PHYSICS LETTERS A, vol.214, pp.21-26, 1996 (SCI-Expanded)

XIX. **VARIABLE-COEFFICIENT 3RD-ORDER KORTEWEG-DEVRIES TYPE EQUATIONS**

GURSES M., KARASU A.

JOURNAL OF MATHEMATICAL PHYSICS, vol.36, no.7, pp.3485-3491, 1995 (SCI-Expanded)

XX. **INTEGRABLE SIGMA-MODELS**

GURSES M., KARASU A.

INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.6, no.3, pp.487-500, 1991 (SCI-Expanded)

XXI. **HARMONIC MAPS AND MAGNETOSTATIC, AXIALLY-SYMMETRICAL SOLUTIONS OF THE KALUZA-KLEIN THEORY**

DERELI T., ERIS A., ERIS A., KARASU A.

NUOVO CIMENTO DELLA SOCIETA ITALIANA DI FISICA B-GENERAL PHYSICS RELATIVITY ASTRONOMY AND MATHEMATICAL PHYSICS AND METHODS, vol.93, no.1, pp.102-112, 1986 (SCI-Expanded)

XXII. **SYMMETRIC SPACE PROPERTY AND AN INVERSE SCATTERING FORMULATION OF THE SAS EINSTEIN-MAXWELL FIELD-EQUATIONS**

ERIS A., GURSES M., KARASU A.

JOURNAL OF MATHEMATICAL PHYSICS, vol.25, no.5, pp.1489-1495, 1984 (SCI-Expanded)

XXIII. **THE SYMMETRIC SPACE PROPERTY AND THE EMBEDDING PROBLEM FOR STATIONARY AXI-SYMMETRIC EINSTEIN-MAXWELL FIELDS**

ERIS A., GURSES M., KARASU A.

LECTURE NOTES IN PHYSICS, vol.180, pp.168-169, 1983 (SCI-Expanded)

Metrics

Publication: 23

Citation (WoS): 517

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H-Index (Scopus): 11

Non Academic Experience

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