

## **Prof. ATALAY KARASU**

### **Personal Information**

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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: Harmonic Mappings, 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  $\pi$ -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.İSMAIL(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

## Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Minimal extension of Einstein's theory: The quartic gravity**  
 KARASU A., Kenar E., TEKİN B.  
 PHYSICAL REVIEW D, vol.93, no.8, 2016 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- VIII. **Higher dimensional Bell-Szekeres metric**  
 Gurses M., Ipekoglu Y., Karasu A., Senturk C.  
 PHYSICAL REVIEW D, vol.68, no.8, 2003 (Journal Indexed in SCI)
- IX. **Higher dimensional metrics of colliding gravitational plane waves**  
 Gurses M., Kahya E., Karasu A.  
 PHYSICAL REVIEW D, vol.66, no.2, 2002 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)

- 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 (Journal Indexed in SCI)
- XIII. **Some higher-dimensional vacuum solutions**  
 Gurses M., Karasu A.  
 CLASSICAL AND QUANTUM GRAVITY, vol.18, no.3, pp.509-516, 2001 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- XVI. **Integrable KdV systems: Recursion operators of degree four**  
 Gurses M., Karasu A.  
 PHYSICS LETTERS A, vol.251, no.4, pp.247-249, 1999 (Journal Indexed in SCI)
- XVII. **Integrable coupled KdV systems**  
 Gurses M., Karasu A.  
 JOURNAL OF MATHEMATICAL PHYSICS, vol.39, no.4, pp.2103-2111, 1998 (Journal Indexed in SCI)
- XVIII. **Degenerate Svinolupov KdV systems**  
 Gurses M., Karasu A.  
 PHYSICS LETTERS A, vol.214, pp.21-26, 1996 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- XX. **INTEGRABLE SIGMA-MODELS**  
 GURSES M., KARASU A.  
 INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.6, no.3, pp.487-500, 1991 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)

## Citations

Total Citations (WOS):481

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