



# H. Özgür Çıldıroğlu

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## Teaching Experience

**2021-22 Spring** - Instructor

- [Quantum Optics](#)

**2021-22' Fall** - Instructor

- [Advanced Quantum Mechanics II](#)

**2020-21' Spring** - Instructor

- Introduction to High Energy Physics

**2014-20'** - Teaching Assistant

- Electromagnetic Theory
- Mathematical Methods in Physics I
- Mathematical Methods in Physics II
- Advanced Optic Laboratory
- Quantum Mechanics Laboratory
- Mechanics Laboratory
- Electric Laboratory
- Waves and Optic Laboratories

## Events organized

**2021'** 10 Weeks (Online) Seminar Series II - Women in Tech II

**2020'** 10 Weeks Seminar Series I - Women in Tech I - KOBIT |3>

Quantum Optics and Information Meeting - Feynman Lecture Notes III

**2019'** Aharonov-Bohm Effect in its 60th Anniversary: The Inevitable Role of Topology and Geometry in Physics - Feynman Lecture Notes II

**2018'** Feynman Lecture Notes I...

## Interests

**Scientific** Foundations of Quantum Mechanics, Quantum Optics and Information, Quantum Cryptography, Topological and Geometric Phases.

**Sports & Activities** Basketball, Swimming, Camping, Photography

**Readings** Sociology, Psychology, Linguistics, Comics

**Languages** English, German, Turkish

## Education

**PhD | 2020'**

- Ankara University - Department of Physics Engineering
- [Thesis](#): Investigation of Geometric and Topological Phase for Entangled Quantum State | Supervisor: [Prof. Dr. Ali Ulvi Yilmazer](#)

**MSc | 2021-**

- Middle East Technical University - Institute of Applied Mathematics Cryptography Program

**MSc | 2015'**

- Hacettepe University - Department of Physics Engineering
- [Thesis](#): Geometric phases and their applications in quantum field theory | Supervisor: [Prof. Dr. Müge Boz](#); Prof. Dr. Namık Kemal Pak'

**BSc | 2020'**

- Anadolu University - Department of Sociology

**BSc | 2012'**

- Hacettepe University - Department of Physics Engineering
- Thesis: Group Theory in Physics | Advisor: Prof. Dr. Metin Önder'

## Publications

- H.O. Cildiroglu and A.U.Yilmazer, Investigation of the Aharonov-Bohm and Aharonov-Casher Topological Phases for Quantum Entangled States, <https://doi.org/10.1016/j.physleta.2021.127753>, Phys. Lett. A, 2021,.
- H.O. Cildiroglu and A.U.Yilmazer, Dual scalar Aharonov Bohm phase, AIP Conf. Proc., 2178, 030047, <https://doi.org/10.1063/1.5135445>, 2019.
- B. Hashemi, H.O. Cildiroglu and A.U.Yilmazer, Scalar He-Mckellar-Wilkens effect, AIP Conf. Proc., 2178, 030046, <https://doi.org/10.1063/1.5135444>, 2019.
- H.O. Cildiroglu and A.U.Yilmazer, Topological effects of Aharonov-Bohm type and the role of the quantum entanglement, AIP Conf. Proc., 2042, 020045, <https://doi.org/10.1063/1.5078917>, 2018.
- M.E. Tunalioglu, H.O. Cildiroglu and A.U.Yilmazer, Entanglement measures in connection with the geometric phase for a hybrid Aharonov-Casher (AC) setup, To be published.
- H.O. Cildiroglu and A.U.Yilmazer, Unified treatment of quantum mechanical phase effects on entangled quantum states, To be published.

## Recent Presentations and Participations

- Unified Treatment of Quantum Mechanical Phase Effects on Entangled Quantum States, TPS37.
- Dualities and Identities in AB Type Geometric Phases, Ankara University.
- Investigation of AC Phase for an entangled state in quantum mechanics, 12th Young Researcher Workshop, Padua University.
- From Hamilton-Jacobi Equation to Schrödinger Equation, ITU.
- Quantum Simulation 2019, Participant, Solway, Bruxelles, Belgium.
- Fourth Topological Effect of AB Type, KOBIT |2>.

## Research Projects

- Creating and Observing NV- Color Centers in Diamond with Laser Writing Method, TUBITAK, Researcher, 2021-.
- Ulucanlar in the Light of Science, Science and Society, TUBITAK, 2018'.
- First Step to Hacettepe-CERN Scientific Cooperation within the Framework of the CERN-LHC-CMS Project, Researcher, 2015'.