

# Atom Zhora Muradyan

## Institute of Physics

Chair of General Physics and Astrophysics named after Academician Victor  
Hambardzumyan  
Professor

☎ 23-39

✉ muradyan@ysu.am

## 🌐 Language skills

Հայերեն Русский English

## 📖 Publications

*Article*

### **Jaynes-Cummings Model in Counter Propagating Waves Basis: Large Numbers of Excitations**

A.Zh. Muradyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2023 134-139

*Article*

### **Spin-dependent multichannel scattering of electron in a quantum wire**

A.Zh. Muradyan, D.A. Badalyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2023 31-37

*Article*

### **Far resonance Kapitza-Dirac diffraction: from Raman-Nath to Bragg and multiple beam atomic interferometer**

Atom Zh. Muradyan

Optical Memory and Neural Network 2023 S296-S304

*Article*

### **Absorptive Atom Interferometer**

A. Zh. Muradyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2023 355 - 361

*Article*

### **Quantum Tunneling Time of a Moderately Singular Potential: Regularization Method**

A.Zh. Muradyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2022 230-237

*Article*

### **Spin-dependent multichannel scattering of electron in a quantum wire with a point defect**

D.A. Badalyan, A. Zh. Muradyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2022 41-48

*Article*

### **On Quantum Tunneling of a Singular Potential**

A. Zh. Muradyan

*Article*

**Spontaneous Emission of a Semiconductor Quantum Dot without the Dipole Approximation**

G. A. Muradyan, L. R. Arzumanyan, A. Zh. Muradyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2020 317-322

---

*Manual*

**Լաբորատոր պարապմունքների ուղեցույց: Մոլեկուլային ֆիզիկա**

Ա. ժ. Մուրադյան, Դ. Հ. Բադալյան, Ռ. Յ. Գաբրիելյան, Մ. Վ. Հայրապետյան, Լ. Ա. Հովհաննիսյան

2019 60

---

*Article*

**Approximate Formula for Superposition State of two Level Atom and Large Number of Counterpropagating Photons**

A. Zh. Muradyan, G. A. Muradyan, L. R. Arzumanyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2019 11 - 16

---

*Article*

**Лазерные бегущие волны для дифракции Капицы-Дирака в атомном интерферометре**

А.Ж. Мурадян, Г.А. Мурадян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2018

135-142

---

*Article*

**Переходы между квантованными стоячими волнами при взаимодействии с атомом в режиме Рамана-Ната**

А.Ж. Мурадян, Г.А. Мурадян, Л.Р. АРЗУМАНЯН

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2018

251-256

---

*Article*

**Квазиклассическое приближение для резонансного рассеяния Капицы-Дирака**

А.Ж. Мурадян, Г.А. Мурадян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2017

271-278

---

*Article*

**Tunneling dynamics of a two-atom system**

A Zh Muradyan, G Muradyan, H Hakobyan

Journal of Physics: Conference Series 2016 012013 (5)

<http://iopscience.iop.org/journal/1742-6596>

---

*Article*

**Generalized Bloch states of a two-level atom in the field of counterpropagating waves: application to the Kapitza-Dirac diffraction problem**

Atom Zh Muradyan, Gevorg Muradyan

Physica Scripta 2015 115401 (9)

<http://iopscience.iop.org/journal/1402-4896>

---

*Article*

**Approximate solution of the Schrödinger equation for an atom in the field of a standing wave**

L. A. Hovhannisyan, G. A. Muradyan, A. Zh. Muradyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2014 6-11

---

*Article*

**Total transparency in quantum tunneling of counterpropagating waves**

A. Zh. Muradyan, G. A. Muradyan, H. R. Hakobyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2014 98 -102

---

*Article*

**Raman - Nath approximation for diffraction of atoms in the laser field taking into account spontaneous emission of atoms for ground and high energy level**

L Hovhannisayan, A Zh Muradyan

Journal of Physics: Conference Series 2012 012011

---

*Article*

**Quantum superposition principle and generation of short optical pulses**

Atom Zh Muradyan, Gevorg Muradyan

Journal of Physics: Conference Series 2012 012006

---

*Article*

**Improvement of the Raman-Nath approximation for the resonant Kapitza-Dirac scattering**

L. A. Hovhannisyan, A. Zh. Muradyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2010 12-16

---

*Article*

**Train of high-power femtosecond pulses: Probe wave in a gas of prepared atoms**

Atom Zh. Muradyan, Gevorg Muradyan

Physical Review A 2009 035801

---

*Article*

**Collapse and revival in atom internal dynamics due to quantum translational motion**

A Zh Muradyan, G A Muradyan

Journal of Physics B: Atomic, Molecular and Optical Physics 2004 4471 - 4482

---

*Article*

**Theory of a compound large-angle atom beam splitter. II. Initial state deflection**

A. Zh. Muradyan, G. A. Muradyan, P. R. Berman

Physical Review A 2004 065601

---

*Article*

**Theory of a compound large-angle atom beam splitter**

A. Zh. Muradyan, A. A. Poghosyan, P. R. Berman

Physical Review A 2003 033604

---

*Article*

**Stationary states of the Jaynes-Cummings model with atomic centre-of-mass quantum motion: analytical approximation to transfer counterpropagating waves into a standing wave in a large photon number limit**

A Zh Muradyan, G A Muradyan

Journal of Physics B: Atomic, Molecular and Optical Physics 2002 3995 - 4013

---

*Article*

**Momentum transfer for an optical transition in a prepared two-level atom**

A. Zh. Muradyan, H. L. Haroutyunyan

Physical Review A 2000 013401

---

*Conference*

**Atom diffraction by a standing wave: from Raman-Nath to Bragg and multi-beam atom interferometry**

A. Muradyan

---