VASILIOS N. STAVROU
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Research Collaborations

- Department of Physics, University of Ioannina, Greece.
- Department of Informatics & Telecommunications, University of Ioannina, Greece.
- School of Electrical and Computer Engineering, National Technical University of Athens.
- Department of Physics & Astronomy, University of Iowa, USA.

Research Interests

- Phonon theories in low-dimensional structures.
- Electron/Hole scattering theory.
- Light-material interactions.
- Quantum Optics.
- Quantum Computing: spin-qbits, charge qbits, photon qbits.
- Computational Methods of Physics.

Postdoctoral Research(~10 years)

- Physics and Astronomy, University of Iowa, IA, USA.
- Department of Physics, State University of New York (SUNY), Buffalo, USA.
- Helsinki University of Technology, Finland.
- DLR (Deutsche Forschungsanstalt fuer Luft und Raumfahrt e.V.-
  -German Aerospace Research Center), Stuttgart, Germany.

Teaching and Research

- Teaching experience: 19 years.
- Publications in Journals: 40+.
- Publications in conferences: 40+.

Education-

- BSc in Physics, Department of Physics, University of Ioannina, Greece, 1995.
- MSc in Theoretical Physics, Department of Physics, University of Essex, UK, 1996.
- Phd in Theoretical Physics, Department of Physics, University of Essex, UK, 1999.

Selected Publications

1. Phonon-induced decoherence of a spin based qubit made with asymmetric coupled quantum dots.
   V.N. Stavrou, Physica E: Low-dimensional Systems and Nanostructures 130, 114605 (2021).

2. Genconstraint: a programming tool for constrained optimization problems.
   I.G. Tsoulos, V.N. Stavrou, N. Mastorakis and D. Tsalikakis
   SoftwareX 10, 100355 (2019)

3. DiracSolver: a tool for solving the Dirac Equation.
   I.G. Tsoulos, O.T. Kosmas and V.N. Stavrou
   Computer Physics Communications 236 (2019) 237-243.

4. Spin Qubits: Spin-flip time in Coupled Quantum Dots.
   V.N. Stavrou
   J. Phys.: Condens. Matter 30 455301 (2018).

5. Spin-flip transitions in self-assembled Quantum Dots.
   V.N. Stavrou
   J. Phys.: Condens. Matter 29 (2017) 485301.

6. Polarized light in coupled quantum dots under an external magnetic field.
   V.N. Stavrou
   Phys. Rev. B 80, 153380, (2009).

7. Charge decoherence in laterally coupled quantum dots due to electron-phonon interactions.
   V.N. Stavrou and X. Hu
   Phys. Rev. B 72, 075362 (2005).

8. Electronic structure calculations of rectangular quantum dots.
   E. Räsänen, H. Saarikoski, V.N. Stavrou, A. Harju, M.J. Puska and R.M. Nieminen
   Phys. Rev. B 67, 235307 (2003).

9. Electron scattering and capture rates by emission of hybrid optical phonons.
   V.N. Stavrou, C.R. Bennett, O.M.M. Al-Dossary, M. Babiker
   Phys. Rev. B 63, 205304 (2001).

10. Electron and Phonon Resonances of Electron Capture in AlN/GaN Quantum Wells.
    V.N. Stavrou, C.R. Bennett, M. Babiker, N.A. Zakhleniuk and B.K. Ridley,
    Phys Low-Dimens. Str., 1-2 (1998) pp. 23-32.