

AMOP reference links (Updated list given on 2nd and 3rd pages of each class presentation)

- [Web Resources - front page](#)
- [UAF Physics UTube channel](#)
- [Quantum Theory for the Computer Age](#)
- [Principles of Symmetry, Dynamics, and Spectroscopy](#)
- [Classical Mechanics with a Bang!](#)
- [Modern Physics and its Classical Foundations](#)
- [2014 AMOP](#)
- [2017 Group Theory for QM](#)
- [2018 AMOP](#)
- [Representations Of Multidimensional Symmetries In Networks - harter-jmp-1973](#)
- Alternative Basis for the Theory of Complex Spectra**
- [Alternative Basis for the Theory of Complex Spectra I - harter-pra-1973](#)
- [Alternative Basis for the Theory of Complex Spectra II - harter-patterson-pra-1976](#)
- [Alternative Basis for the Theory of Complex Spectra III - patterson-harter-pra-1977](#)
- [Frame Transformation Relations And Multipole Transitions In Symmetric Polyatomic Molecules - RMP-1978](#)
- [Asymptotic eigensolutions of fourth and sixth rank octahedral tensor operators - Harter-Patterson-JMP-1979](#)
- [Rotational energy surfaces and high- J eigenvalue structure of polyatomic molecules - Harter - Patterson - 1984](#)
- [Galloping waves and their relativistic properties - ajp-1985-Harter](#)
- [Rovibrational Spectral Fine Structure Of Icosahedral Molecules - Cpl 1986 \(Alt Scan\)](#)
- Theory of hyperfine and superfine levels in symmetric polyatomic molecules.**
- I) [Trigonal and tetrahedral molecules: Elementary spin-1/2 cases in vibronic ground states - PRA-1979-Harter-Patterson \(Alt scan\)](#)
- II) [Elementary cases in octahedral hexafluoride molecules - Harter-PRA-1981 \(Alt scan\)](#)
- Rotation-vibration spectra of icosahedral molecules.**
- I) [Icosahedral symmetry analysis and fine structure - harter-weeks-jcp-1989 \(Alt.\)](#)
- II) [Icosahedral symmetry, vibrational eigenfrequencies, and normal modes of buckminsterfullerene - weeks-harter-jcp-1989 \(Alt scan\)](#)
- III) [Half-integral angular momentum - harter-reimer-jcp-1991](#)
- [Rotation-vibration scalar coupling zeta coefficients and spectroscopic band shapes of buckminsterfullerene - Weeks-Harter-CPL-1991 \(Alt scan\)](#)
- [Nuclear spin weights and gas phase spectral structure of 12C60 and 13C60 buckminsterfullerene -Harter-Reimer-Cpl-1992 - \(Alt1, Alt2 Erratum\)](#)
- [Gas Phase Level Structure of C60 Buckyball and Derivatives Exhibiting Broken Icosahedral Symmetry - reimer-diss-1996](#)
- [Fullerene symmetry reduction and rotational level fine structure/ the Buckyball isotopomer 12C 13C59 - jcp-Reimer-Harter-1997 \(HiRez\)](#)
- [Wave Node Dynamics and Revival Symmetry in Quantum Rotors - harter - jms - 2001](#)
- [Molecular Symmetry and Dynamics - Ch32-Springer Handbooks of Atomic, Molecular, and Optical Physics - Harter-2006](#)
- Resonance and Revivals**
- I) [QUANTUM ROTOR AND INFINITE-WELL DYNAMICS - ISMSLi2012 \(Talk\) OSU knowledge Bank](#)
- II) [Comparing Half-integer Spin and Integer Spin - Alva-ISMS-Ohio2013-R777 \(Talks\)](#)
- III) [Quantum Resonant Beats and Revivals in the Morse Oscillators and Rotors - \(2013-Li-Diss\)](#)
- [Resonance and Revivals in Quantum Rotors - Comparing Half-integer Spin and Integer Spin - Alva-ISMS-Ohio2013-R777 \(Talk\)](#)
- [Molecular Eigensolution Symmetry Analysis and Fine Structure - IJMS-harter-mitchell-2013](#)
- [Quantum Revivals of Morse Oscillators and Farey-Ford Geometry - Li-Harter-cpl-2013](#)
- [QTCA Unit 10 Ch 30 - 2013](#)
- [AMOP Ch 0 Space-Time Symmetry - 2019](#)

**In development - a web based A.M.O.P. oriented reference page, with thumbnail/previews, greater control over the information display, and eventually full on Apache-SOLR Index and search for nuanced, whole-site content/metadata level searching.*

AMOP reference links (Updated list given on 2nd and 3rd pages of each class presentation)

[Int.J.Mol.Sci, 14, 714\(2013\) p.755-774,](#) [QTCA Unit 8 Ch. 23-25,](#) [QTCA Unit 9 Ch. 26,](#) [PSDS Ch. 5,](#) [PSDS Ch. 7](#)

Intro spin $\frac{1}{2}$ coupling
[Unit 8 Ch. 24 p3](#)

Irrep Tensor building
[Unit 8 Ch. 25 p5.](#)

Intro 3-particle coupling.
[Unit 8 Ch. 25 p28.](#)

H atom hyperfine-B-level crossing
[Unit 8 Ch. 24 p15](#)

Irrep Tensor Tables
[Unit 8 Ch. 25 p12.](#)

Intro 3,4-particle Young Tableaus
[GrpThLect29 p42.](#)

Hyperf. theory [Ch. 24 p48.](#)

Wigner-Eckart tensor Theorem.
[Unit 8 Ch. 25 p17.](#)

Young Tableau Magic Formulae
[GrpThLect29 p46-48.](#)

Hyperf. theory Ch. 24 p48.
[Deeper theory ends p53](#)

Intro 2p3p coupling
[Unit 8 Ch. 24 p17.](#)

Tensors Applied to d,f-levels.
[Unit 8 Ch. 25 p21.](#)

Intro LS-jj coupling
[Unit 8 Ch. 24 p22.](#)

Tensors Applied to high J levels.
[Unit 8 Ch. 25 p63.](#)

CG coupling derived (start)
[Unit 8 Ch. 24 p39.](#)

CG coupling derived (formula)
[Unit 8 Ch. 24 p44.](#)

Lande' g-factor
[Unit 8 Ch. 24 p26.](#)

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AMOP reference links (Updated list given on 2nd and 3rd and 4th pages of each class presentation)

Predrag Cvitanovic's: Birdtrack Notation, Calculations, and Simplification

[Group Theory - PUP Lucy Day - Diagrammatic notation - Ch4-2008](#)

[Group Theory - Birdtracks Lies and Exceptional Groups - Cvitanovic-2011](#)

[Simplification Rules for Birdtrack Operators - Alcock-Zeilinger-Weigert-zeilinger-jmp-2017](#)

[Birdtracks for SU\(N\) - 2017-Keppeler](#)

[Chaos Classical and Quantum - 2018-Cvitanovic-ChaosBook](#)

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Frank Rioux's: UMA method of vibrational induction

[Quantum Mechanics Group Theory and C60 - Frank Rioux - Department of Chemistry Saint Johns U](#)

[Symmetry Analysis for H2O- H2OGrpTheory- Rioux](#)

[Quantum Mechanics-Group Theory and C60 - JChemEd-Rioux-1994](#)

[Group Theory Problems- Rioux- SymmetryProblemsX](#)

[Comment on the Vibrational Analysis for C60 and Other Fullerenes Rioux-RSP](#)

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Supplemental AMOP Techniques & Experiment

[Many Correlation Tables are Molien Sequences - Klee \(Draft 2016\)](#)

[High-resolution spectroscopy and global analysis of CF4 rovibrational bands to model its atmospheric absorption- carlos-Boudon-iqsr-2017](#)

[Symmetry and Chirality - Continuous Measures - Avnir](#)

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Special Topics & Colloquial References

[r-process nucleosynthesis from matter ejected in binary neutron star mergers-PhysRevD-Bovard-2017](#)

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Contributions to the International Symposia on Molecular Spectroscopy

[Columbus 2002](#)

[Columbus 2004](#)

[Columbus 2006](#)

[Columbus 2007\(II\)](#)

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