

## Information at a Glance

### [Dr. Milton Dean Slaughter](#)

Websites: [PhysicsResearch.Net](#) and [EBASI.ORG](#)

#### [Affiliate Professor of Physics](#)

Department of Physics, Florida International University

**Below is information at a glance concerning Dr. Milton Dean Slaughter**

#### **Past positions (listed chronologically, beginning with Present):**

- [Professor \(Affiliate\) of Physics](#), Department of Physics, Florida International University, Miami, Florida (2006-Present);
- [Professor Emeritus and Department Head and Chair Emeritus](#) of the University of New Orleans, New Orleans, Louisiana (2006-Present);
- [University Research Professor of Physics](#), Department of Physics of the University of New Orleans, New Orleans, Louisiana (1999-2006);
- [University Research Professor of Physics \(permanent title\) and Department Head and Chair](#) of the Department of Physics of the University of New Orleans, New Orleans, Louisiana (1996-1999);
- [Professor of Physics and Department Head and Chair](#) of the Department of Physics of the University of New Orleans, New Orleans, Louisiana (1989-1996);
- [Nuclear and Particle Physics Group Staff Physicist](#) in the Medium Energy Physics Division of Los Alamos National Laboratory of the University of California (1987-1989);
- [Chairman/Member, Edward Bouchet Abdus Salam Institute \(EBASI\)](#) of the Abdus Salam International Centre for Theoretical Physics ([ICTP](#)) (Founding Member, appointed 1988 by Nobel Laureate Prof. Abdus Salam; Chairman, 2009-Present);
- [Assistant Theoretical Division Leader for Administration](#) at Los Alamos National Laboratory of the University of California (1981-1987);
- [Historically Black Colleges and Universities Project Manager](#) (HBCU) for Los Alamos National Laboratory of the University of California (1983-1986);
- [Visiting Associate Professor of Physics in the Center for Theoretical Physics](#), University of Maryland, College Park (1984-1985);
- [Affirmative Action Representative for the Theoretical Division](#) at Los Alamos National Laboratory of the University of California (1978-1984);
- [Detonation Theory and Applications Group Staff Physicist in the Theoretical Division](#) of the Los Alamos National Laboratory of the University of California (1977-1981);
- [Postdoctoral Fellow in the Elementary Particles and Field Theory Group](#) of the Theoretical Division of Los Alamos Scientific Laboratory (1976-1977);
- [Postdoctoral Fellow in the Center for Theoretical Physics](#), University of Maryland, College Park, Maryland (1974-1976);
- [National Defense Education Act \(NDEA\) Pre-doctoral Fellow](#), Department of Physics (LSUNO, 1971-1974);
- [Graduate Teaching Assistant \(Astronomy\)](#), Department of Physics, Louisiana State University in New Orleans (LSUNO, 1972-1973);
- [Hungarian Interpreter](#), United States Air Force Security Service (1966-1970);
- [Engineering Aide, Boeing Company](#), New Orleans, LA. Saturn 1-C rocket development (1964-1965).

## Membership in professional organizations, including offices held:

- **Fellow, American Association for the Advancement of Science (AAAS)** (Elected 2014). Citation: *For contributions to non-perturbative elementary particle and nuclear physics, and for the creation of effective educational programs involving minority and female STEM students;*
- **Chairman, Edward Bouchet Abdus Salam Institute (EBASI)** of the Abdus Salam International Centre for Theoretical Physics (**ICTP**) (2009-Present);
- **The Optical Society of America (OSA);**
- **Member, Scientific Advisory Council to the International Conference on Contemporary Problems in Mathematical Physics (COPROMAPH)** (Republic of Benin) (2001-2004);
- **Fellow, American Physical Society** (Elected 1999). Citation: *For creating effective programs that attract and educate minority and female physics students and involve historically black colleges and universities in forefront research;*
- **Elected General Member-at-Large and Executive Committee Member and Officer of the American Physical Society Forum on Education** (1993-1995 term);
- **Chair and Member of the American Physical Society Committee on Minorities in Physics** (1989-1991);
- **Charter Fellow and National Technical Executive Officer and Editor of the National Society of Black Physicists Newsletter** (three terms: 1981-1987).

## Selected contributions to the advancement of science other than publications (including non-print media, editorship, consultation, administration, and other significant service):

- **Invited participant, African American Workforce Development in Physics and Astronomy Workshop, Morehouse College and Hilton Atlanta, Atlanta, GA, November 2-3, 2017. A Pre-Conference to the Annual Meeting of the National Society of Black Physicists. Supported by the National Science Foundation under Grant No. DGE-1663852.** A convening of leading experts in K-12 education, Higher Education, Physics/Astronomy, and key stakeholders from industry;
- **“White Paper”** entitled **Status of Underrepresented Minorities in Science, Technology, Engineering, and (STEM)** (PDF, April 10, 2019)—*Contains a program solution outline for an University Organizational Unit (UOU) which addresses the chronic and acute problem of identifying, attracting, motivating, retaining, and then preparing talented underrepresented minority undergraduate students for graduation with STEM baccalaureate degrees, for further STEM graduate studies—especially at the doctorate level, and for productive careers in science, technology, engineering, mathematics and associated disciplines;*
- **Reflections in Diversity: Increasing Minority Participation in University STEM Programs.** Optics & Photonics News, 05 December 2014;
- **STEM Transformation Institute Founding Faculty Fellow, Florida International University (2014);**
- **American Association for the Advancement of Science Fellow** (Elected 2014). Citation: *For contributions to non-perturbative elementary particle and nuclear physics, and for the creation of effective educational programs involving minority and female STEM students;*

- [\*\*Status of Underrepresented Minorities in Science, Technology, Engineering, and Mathematics \(STEM\).\*\*](#) Invited Special Seminar for Black History Month. College of Science, Virginia Polytechnic Institute and State University, 26 February, 2014, Blacksburg, Virginia;
- [\*\*Some Interesting Properties of the Spin 3/2 Ground-State Baryon Decuplet.\*\*](#) Invited Presentation, Department of Physics and Astronomy, University of Kentucky, 30 January 2014, Lexington, Kentucky;
- [\*\*Ground-State Baryon Decuplet Form Factors.\*\*](#) Invited Presentation Miami 2010, University of Miami, Conference on Elementary Particle Physics, Astrophysics, and Cosmology, 14 - 19 December 2010, Fort Lauderdale, Florida;
- [\*\*U-spin 3/2 Baryon Decuplet Magnetic Moments.\*\*](#) Invited Presentation Miami 2009, University of Miami, Conference on Elementary Particle Physics, Astrophysics, and Cosmology, 15 - 20 December 2009, Fort Lauderdale, Florida;
- [\*\*Chairman, Edward Bouchet Abdus Salam Institute \(EBASI\) of the Abdus Salam International Centre for Theoretical Physics \(ICTP\) \(2009-Present\);\*\*](#)
- [\*\*\$\gamma\$  N  \$\Delta\$  Form Factors and Wigner Rotations. Milton Dean Slaughter, \*Phys. Rev. C\* 80, 038201 \(2009\);\*\*](#)
- [\*\*Physics and Society-Science in Africa-Present and Future: The Role of ICTP--A Terse Overview\*\*](#), "Discussion on Science in Africa" Presentation, International Centre for Theoretical Physics (ICTP)-Edward Bouchet Abdus Salam Institute (EBASI), Trieste, Italy ( 6 May 2009);
- [\*\*Memorandum of Understanding\*\*](#) (See also [\*\*MOU\*\*](#)) between the Abdus Salam International Centre for Theoretical Physics and the Edward Bouchet Abdus Salam Institute signed on 11 February 2009 by ICTP Director Professor K.R. Sreenivasan (now at New York University) and Professor Milton D. Slaughter, founding EBASI Council Member and Chairman (See [\*\*EBASI Appointing Document\*\*](#)). This document formalizes mechanisms which allow ICTP and EBASI to participate jointly in synergistic scientific and technical collaborations among physical scientists, mathematicians, engineers, and technologists from America and Europe and their counterparts from developing countries, especially Africa;
- [\*\*American Physical Society Fellow.\*\*](#) (Elected 1999). Citation: *For creating effective programs that attract and educate minority and female physics students and involve historically black colleges and universities in forefront research;*
- [\*\*Elected General Member-at-Large and Executive Committee Member and Officer of the American Physical Society Forum on Education \(1993-1995 term\);\*\*](#)
- [\*\*Understanding the Interaction of Ultra High Intensity Laser Pulses with Extremely Small Physical Systems of Importance in Biological and Environmental Research from a Purely Quantum Point of View Part II: Phenomenology and Applications,\*\*](#) Environmental and Biological Applications of Lasers (EBAL), 2nd US-African Advanced Institute EBAL 2008, Cairo, Egypt (January 19-28, 2008);
- [\*\*Understanding the Interaction of Ultra High Intensity Laser Pulses with Extremely Small Physical Systems of Importance in Biological and Environmental Research from a Purely Quantum Point of View Part I: Theory and Phenomenology.\*\*](#)
- [\*\*Environmental and Biological Applications of Lasers \(EBAL\) 2nd US-African Advanced Institute EBAL 2008, January 19-28, 2008;\*\*](#)
- [\*\*Session Chair and Moderator:\*\*](#) Environmental and Biological Applications of Lasers (EBAL), 2nd US-African Advanced Institute, EBAL 2008, Cairo, Egypt (January 19-28, 2008);
- [\*\*Physics and Society--The Future: Nuclear and Accelerator Science Education and Research Enhancement An Overview\*\*](#) "Enhancing nuclear science education and training using accelerators." Invited Presentation, Technical Meeting organized by the Physics Section of the Division of Physical and Chemical Sciences of the **International Atomic Energy Agency (IAEA)** in cooperation with the Ghana Atomic Energy Commission—attended by twelve international experts—held in Accra, Ghana, from 11 – 14th September 2007;

- **Louisiana Board of Regents Support Fund grant** entitled *Enhancement of the Applied Optics Laboratory for Instruction and Research—A Plan to Positively Improve Minority Science Education* (2002);
- **Consultant**, Projects (including the grant entitled “*The Africa-America Cooperative Program in the Mathematical Sciences*”) managed by the **Florida State University** under the auspices of the **United States Agency for International Development** (2001-2002);
- **Some American Physicists’ Efforts in Africa, Invited Presentation**, University of the Western Cape, Cape Town, South Africa (July, 2000);
- **National Science Foundation grant** entitled **Louis Stokes Louisiana Alliance for Minority Participation (LSLAMP or LAMP) (1995-2000)**. **Louisiana State-wide Co-Principal Investigator and Associate Director, and cooperative agreement and grant initiator. Also Principal Investigator for the University of New Orleans LSLAMP State component.** This program was designed to increase the probability that underrepresented minority students who major in certain science, mathematics, engineering, and technological fields ultimately succeed in obtaining the Bachelor of Science degree. In support of this program, two courses—Physics: An Overview (Undergraduate Level) and Special Topics in Physics— Vector Analysis (Undergraduate Level) were created by me and added to the physics curriculum. The program was known locally as **Next Step**, [See also **Next Step Brochures**], and produced more than 100 graduates;
- **National Science Foundation grant** entitled **RCMS: Research Careers for Minority Scholars--Graduate Dual Degree Program (1992-1999)**. Co-Principal Investigator and initiator. A highly regarded and very successful program designed to increase the probability that beginning undergraduate science, mathematics, or engineering minority students would successfully obtain graduate degrees. Of ten original (first year) students (seven male and three female), seven obtained Masters in physics, mathematics, or computer science, two received dual B. S. degrees in physics and engineering, and one student dropped out. (The RCMS program underwent a nation-wide phase-out by the National Science Foundation in 1995 and was replaced by the **Alliance for Minority Participation (AMP)** program now known as the *Louis Stokes Alliance for Minority Participation* program in Louisiana);
- **University Research Professorship (permanent title)**, University of New Orleans (1996);
- **National Science Foundation grant** entitled *Research on an Algebraic Nonperturbative Approach to Hadrons and Glueballs* (1990-1996);
- **Martin Luther King Jr. Visiting Scientist**, Wayne State University (January 1993);
- **Workshop Organizer and PI: A Workshop for the American Physical Society's Corporate Sponsored Scholarships for Minority Undergraduate Students Who Major in Physics**—Sponsored by the National Science Foundation, the Department of Energy, and the Southeastern Universities Research Association. Hosted by Hampton University and the **Thomas Jefferson National Accelerator Facility** (October 1993);
- **Organized the first national laboratory conference** (the *Historically Black Colleges and Universities Conference*) that brought representatives of over 30 HBCU schools to Los Alamos to confer with Laboratory scientific personnel on research initiatives in all areas of physics, chemistry, and mathematics—A very successful program—(1983).

### **Selected awards, honors, citations, and special appointments:**

- **Fellow, American Association for the Advancement of Science** (2014);
- **STEM Transformation Institute Founding Faculty Fellow**, **Florida International University** (2014). Also see **FIU STEM Founding Faculty Fellow List**;
- **Chair, Edward Bouchet Abdus Salam Institute (EBASI) of the Abdus Salam International Centre for Theoretical Physics (ICTP)** (2009);
- **Member, International Organizing Committee, US-Africa Workshop on Nanosciences**, iThemba LABS, Cape Town South Africa [<http://nanophysics.us/>], (27-28 January, 2007);

- **Successful Nomination: (NSF Proposal 0429721) by Dr. Milton Slaughter for Dr. Ashok Puri in support of a Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring (PAESMEM) (2004) resulting in NSF Grant Number: HRD 0528179, Dr. Ashok Puri (PI) (2005-2007);**
- **Member, Fellowship Committee** of the American Physical Society **Forum on Education** (2000 and 2001);
- **Senior Guest Research Physicist**, International Centre for Theoretical Physics (**ICTP**), Trieste Italy, (2000);
- **Fellow, American Physical Society** (1999);
- **The National Alliance of Research Centers of Excellence Award**, (March 1996);
- **Charter Fellow of the National Society of Black Physicists** (1992);
- **Founding Council Member** of the Edward A. Bouchet Institute of the International Centre for Theoretical Physics (**EBASI**)(1988-Present);
- **Nominated for the Los Alamos National Laboratory Distinguished Performance Award** (1984);
- **Graduate, First Los Alamos National Laboratory Management Training Program** (1983);
- **Recommended by Los Alamos National Laboratory** as eligible and qualified to hold a rotating position as Budget Examiner for Magnetic Fusion, High Energy and Nuclear Physics, and Basic Energy Science Programs in the Office of Management and Budget of the Federal Government (1982);
- **Member, Los Alamos National Laboratory Task Force on Black Recruitment** (1980);
- **Los Alamos Scientific Laboratory Postdoctoral Fellow, Elementary Particle Theory Group of the Theoretical Division** (1976-1977);
- **Postdoctoral Fellow, University of Maryland, College Park, Center for Theoretical Physics**, (1974-1976);
- **National Defense Educational Act Pre-doctoral Fellow** (1971-1974).

### **Selected publications:**

- Radiative Decays and the SU(6) Lie Algebra. Milton Dean Slaughter. <https://arxiv.org/abs/1902.00853>. To be published in the [International Journal of Modern Physics A](#), (2019).
- **[Reflections in Diversity: Increasing Minority Participation in University STEM Programs. Optics & Photonics News, 05 December 2014.](#)** Milton Dean Slaughter.
- Magnetic Moments of the Ground-State  $J^P = 3/2^+$  Baryon Decuplet. Milton Dean Slaughter. [Phys. Rev. D \*\*84\*\*, 071303\(R\) \(2011\)](#) [Rapid Communications]. <http://arxiv.org/abs/1107.2838v2> [hep-ph] (2011).
- $\Omega^-$ ,  $\Xi^{*-}$ ,  $\Sigma^{*-}$ , and  $\Delta^-$  Decuplet Baryon Electric Charge Factor  $F_1(q^2)$ . Milton Dean Slaughter. <http://arxiv.org/abs/1105.3786v2> [hep-ph] (2011).
- Erratum:  $\Omega^-$ ,  $\Xi^{*-}$ ,  $\Sigma^{*-}$ , and  $\Delta^-$  Decuplet Baryon Magnetic Moments. Milton Dean Slaughter. [Phys. Rev. C \*\*83\*\*, 059901\(E\) \(2011\)](#) and <http://arxiv.org/abs/0911.4756> [hep-ph] (2010).
- $\Omega^-$ ,  $\Xi^{*-}$ ,  $\Sigma^{*-}$ , and  $\Delta^-$  decuplet baryon magnetic moments. Milton Dean Slaughter. [Phys. Rev. C \*\*82\*\*, 015208 \(2010\)](#) and <http://arxiv.org/abs/0911.4756> [hep-ph] (2010).



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- $\gamma N \Delta$  Form Factors and Wigner Rotations. Milton Dean Slaughter. [Phys. Rev. C \*\*80\*\*, 038201 \(2009\)](#).
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- Possible Connection between Second Class Currents and the  $\Delta N \gamma$  Form Factors  $G_M^*(q^2)$  and  $G_E^*(q^2)$ ? Milton Dean Slaughter. <http://arxiv.org/abs/hep-ph/0412161v3> (2005).
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- The  $\Delta N \gamma$  Electromagnetic Transition Form Factors  $G_M^*(q^2)$  and  $G_E^*(q^2)$ . Milton Dean Slaughter. Nuclear Physics **A740**, pp. 383-399 (2004).
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- The  $N - \Delta$  Weak Axial-Vector Form Factor  $C_5^A(0)$ . Milton Dean Slaughter. Nuclear Physics **A703**, pp. 295-305 (2002).
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- $BR(\Omega^- \rightarrow \Xi^0 + e^- + \nu_e)$ : An Algebraic Approach. Milton Dean Slaughter. Modern Physics Letters **A10**, pp. 1865-1870 (1995).
- 
- An Algebraic Approach to the Calculation of the Magnetic Moment of the  $\Delta^{++}$ . Milton D. Slaughter. Il Nuovo Cimento **107A, N. 11**, pp. 2567-2572 (1994) and also in Proceedings of Hadron'93, June 21-25, 1993, Villa Olmo, Como, Italy.
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- The Resonant  $P_{33} S_{1+}^{(3/2)}(q^2)$  Electroproduction Multipole Amplitude and the  $\Delta N \gamma$  Scalar Form Factor  $G_C^*(q^2)$ . Milton D. Slaughter. Phys. Rev. **C49**, (Rapid Communications), pp. 2894-2897 (1994).
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- Calculation of the  $\Delta^+ P \gamma$  Photon Decay Amplitude  $A_{1/2}$  and the  $E_{1+} / M_{1+}$  Ratio in Single-Pion Electroproduction: An Algebraic Approach. Milton D. Slaughter and S. Oneda, Phys. Rev. **D49**, pp. 323-327 (1994).
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- A Calculation of the Magnetic Moment of the  $\Delta^{++}$ . Milton Dean Slaughter. Modern Physics Letters **A8**, pp. 3283-3290 (1993).
- 
- Correlation Between the  $1^{++}$  and  $1^{+-} (q\bar{q})$  Mesons, S. Oneda, Milton D. Slaughter, and T. Teshima. Intern. Jour. of Modern Physics Letters **A6**, pp. 4087-4105 (1991).
- 
- $1^{--} \rightarrow 0^{-+}$  Meson Radiative and Pionic Transitions and Mass Splittings. Phys. Rev. **D39**, pp. 2062-2065 (1989), Milton Dean Slaughter and S. Oneda.
- Is the  $f_0(1590)$  the  $0^{++}$  Scalar Glueball? Milton Dean Slaughter. Modern Physics Letters **A3**, pp. 1361-1366 (1988).
- 
- Theoretical Limit on  $t \rightarrow \rho \gamma$  and Constraints On Glueball- $q\bar{q}$  Meson Couplings with the Pion and the Isovector Photon, Phys. Rev. Lett. **59**, pp. 1641-1644 (1987), Milton Dean Slaughter and S. Oneda.
- 
- The Vector Glueball: An Algebraic Approach, Phys. Rev. **D35**, pp. 992-996 (1987), Milton D. Slaughter and S. Oneda.
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- *Charge Commutation Relation Approach to Electroweak Gauge Theories and the Mass of the Second Z Boson*, Phys. Rev. **D30**, pp. 174-180 (1984), Y. Yasue, S. Oneda, and Milton D. Slaughter.
- 
- *A New Evaluation of the Strong  $\Delta\Delta\pi$  Coupling Constant and the Weak Axial-Vector Coupling Constant  $g_A(0)_{\Delta\Delta}$* , Phys. Rev. **D26**, pp. 1191-1193 (1982), Milton D. Slaughter, S. Oneda, and T. Tanuma.
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- *On The Hyperon Magnetic Moments and the  $1^{--} \rightarrow 0^{--} + \gamma$  Decays*, Phys. Rev. **D23**, pp. 787-792 (1981), S. Oneda, T. Tanuma, T. Toiya, Milton D. Slaughter.
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- *A Numerical and Theoretical Analysis of Some Spherically Symmetric Containment Vessel Problems*, [Los Alamos Scientific Laboratory Report LA-8327-MS \(1980\)](#), M. D. Slaughter.
- 
- *Interaction of Explosive-Driven Air Shocks with Water and Plexiglas*, [Los Alamos Scientific Laboratory Report LA-7454 \(1978\)](#), Milton Dean Slaughter, B. W. Olinger, James D. Kershner, and Charles L. Mader.
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- *Why are the Isoscalar Neutral-Current Axial-Vector Couplings and Isoscalar Nuclear Anomalous Moments Small?*, Phys. Lett. **88B**, pp. 343-348 (1979), S. Oneda, T. Tanuma, and Milton D. Slaughter.
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- *Dynamical Constraints on the Couplings of Ground State Mesons - An Estimate of the  $\phi \rightarrow \pi\gamma$  Decay*, Phys. Rev. **D17**, pp. 1389-1394 (1978), S. Oneda, Jung S. Rno, and Milton D. Slaughter.
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- *Intermultiplet Mixing of the Vector Mesons in a Nonperturbative Approach to Broken  $SU(4)$* , Phys. Rev. Lett. **39**, pp. 309-312 (1977), Milton D. Slaughter and S. Oneda.
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- *$D$  and  $D^*$  in the Purely Algebraic Approach to Broken  $SU(4)$* , Phys. Rev. **D15**, pp. 884-887 (1977), H. Hallock, S. Oneda, and Milton D. Slaughter.
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- *$X^0(958)$  or  $E(1420)$ : Which One in Broken  $SU(3)$  and  $SU(2)$  Symmetry?*, Phys. Rev. **D15**, pp. 879-883 (1977), Milton D. Slaughter and S. Oneda.
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- *On Broken  $SU(3)$  in Hyperon Magnetic Moments*, Phys. Rev. **D14**, pp. 1319-1322 (1976), Milton D. Slaughter and S. Oneda.
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- *Possibility of a Ninth  $J^P = 1/2^+$  Baryon II*, Phys. Rev. **D14**, pp. 1314-1318 (1976), Milton D. Slaughter and S. Oneda.
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- *Possibility of a Ninth  $J^P = 1/2^+$  Baryon*, Phys. Rev. **D14**, pp. 799-808 (1976), Milton D. Slaughter and S. Oneda.
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- *Scattering Amplitudes for Inverse Bremsstrahlung and Pair Production in a Laser Pulse*, Phys. Rev. **D11**, pp. 1708-1710 (1975), M. D. Slaughter and J.E. Murphy.
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- *Electron-Laser Pulse Scattering*, M. D. Slaughter. Phys. Rev. **D11**, pp. 1639-1648 (1975).