LEBENSLAUF

PERSÖNLICHEN ANGABEN

Vor – und Nachname:	Stepan Douplii
Pseudonym:	Steven Duplij (Степан Дуплий)
Geburtsdatum:	29.08.1954
Geburtsort:	Tschernyschewsk, Russland
Staatsangehörigkeit:	ukrainisch
Familienstand:	verheiratet mit EU-Bürgerin
Anschrift:	CIT, **Universität Münster**
	Röntgenstraße 7-13, 48149 Münster
Telefon:	0251 8331530
E-Mail:	douplii@uni-muenster.de, sdouplii@gmail.com, duplij@gmx.de
Homepage:	https://www.uni-muenster.de/IT.StepanDouplii

AUSGEWÄHLTER BERUFLICHER WERDEGANG

2019 bis jetzt **Universität Münster** (CIT)
Wissenschaftlicher Mitarbeiter am IT-Zentrum: Quantenberechnung und Quanteninformation

2016 **Hochschule Bochum**
Lehrbeauftragte der Mathematik im Sommersemester 2016
Aufgabe: Vorlesung und Übung "Mathematik für Informatiker 2 und Matlab-Praktikum

2014 bis 2016 **Westfälische Wilhelms-Universität Münster**
Wissenschaftlicher Mitarbeiter am Fachbereich der Mathematik
Forschung: Mathematik and theoreticsche Physik

1983 bis 2014 **Kharkov National University, Charkiw, Ukraine**
Führender hochrangiger wissenschaftlicher Mitarbeiter beim Kernphysiklabor
Forschung: Kernphysik, mathematische Physik, DNA Theorie

2011 bis 2012 **Rutgers University, USA**
Fulbright-Stipendiat in der Mathematik
Lehrer der Mathematik
Forschung: mathematische Physik

2000 bis heute **CERN**
CMS-Kollaboration

1992 bis 1993 **Kharkov State University, Charkiw, Ukraine**
Wissenschaftlicher Mitarbeiter beim Astronomischen Observatorium

1978 bis 1983 **Kharkov State University, Charkiw, Ukraine**
Halbzeit-Forscher beim Radiophysiklabor
Forschung: Noise Theorie

Dr. habil. Stepan Douplii

AUSBILDUNG

2002	**Erhalten des akademischen Status des hochrangigen wissenschaftlichen Mitarbeiters von der Höchsten Attestationskommission,** Kiew, Ukraine
1999	Bogolyubov Institute of Theoretical Physics, Kiew, Ukraine
	Abschluss: **Habilitation**, Doktor der physikalisch-mathematischen Wissenschaften
1983	**Promotionsschrift:** "Theoretical Investigation of Hard Processes in QCD"
1978 bis 1982	Kharkov State University, Charkiw, Ukraine
	Postgraduales Studium der Theoretischen Physik
	Abschluss: **Doktorgrad**, Kandidat der physikalisch-mathematischen Wissenschaften
1974 bis 1978	Kharkov State University, Charkiw, Ukraine
	Studium der Theoretischen Kernphysik

Abschluss: **Diplomgrad Univ.**, Physikingenieur, theoretische Kernphysik (sehr gut)

Vollständige Liste von wissenschaftlichen Publikationen auf Anfrage verfügbar.
Insgesamt: **192** Veröffentlichungen, darunter 9 Bücher und 183 Artikel.
Darüber hinaus: **130** Einträge in der *Concise Encyclopedia of Supersymmetry*.

SUPERVISION
5 Studenten bekamen sehr gute M.Sc.-Abschlusse in der Theoretischen Physik
4 PhD-Studenten, 1 PhD-Dissertation verteidigt

QUALIFIKATIONEN UND KENNTNISSE

EDV-Kenntnisse	Programmierung: Perl, Mathematica, Maple, LaTeX, BibTeX, HTML
	Betriebssysteme: MS-DOS, Windows, Unix, Linux
	Software: Scientific WorkPlace, dBase, Adobe Produkte, Microsoft Office
Sprachkenntnisse	Englisch (verhandlungssicher), Deutsch (konversationssicher, B1),
	Russisch (Muttersprache), Ukrainisch (Muttersprache),
	Italienisch (Grundkenntnisse)

MITGLIEDSCHAFTEN IN BERUFSVEREINIGUNGEN
AMERICAN PHYSICAL SOCIETY (College Park, MD)
AMERICAN MATHEMATICAL SOCIETY (Providence, RJ)
INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS (Cambridge, MA)
ENGLISH INTERNATIONAL ASSOCIATION (Lund, Schweden)
RUSSIAN UNION OF WRITERS (Moskau, Russland)
AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE (Washington, DC)
EUROPEAN PHYSICAL SOCIETY (Genf, Schweiz)
INTERNATIONAL MATHEMATICAL UNION (IAS, Princeton)

GELISTET
UNIVERSITÄT MÜNSTER HIGHLY CITED RESEARCHERS
WORLD DIRECTORY OF MATHEMATICIANS
MARQUES WHO IS WHO IN AMERICA
ENCYCLOPEDIA OF MODERN UKRAINE
ACADEMIC GENEALOGY OF THEORETICAL PHYSICISTS
MATHEMATICS GENEALOGY PROJECT

WISSENSCHAFTLICHE RESULTATE UND INNOVATIVE IDEEN

- A new direction in **supersymmetric models** of elementary particles, based on the inclusion of semigroups is proposed. The concept of *semi-supermanifold* is introduced.

- **Quantum groups**: a generalization of the Hopf algebra is introduced by relaxing the requirement for inverses of the generators of the Cartan subalgebra, which leads to a *regular quasi-R-matrix* structure. The actions of universal enveloping quantum algebras on quantum planes of arbitrary dimension are found.

- **Singular theories** with degenerate Lagrangians are formulated *without* involving constraints. A new partial Hamiltonian formalism is constructed. A new antisymmetric bracket (an analogue of the Poisson bracket) describing the time evolution of singular systems is built.

- **Nonlinear gauge theories**: a generalized approach to nonlinear classical electrodynamics and supersymmetric electrodynamics is suggested, which takes into account all possible types of media and nonlocal effects, and is described in both Lagrangian and *non-Lagrangian* theories.

- **Gravity**: nonlinear equations for gravito-electromagnetism and an exact form of the Maxwell gravitational field equations are obtained. A general approach to describing the interaction of multi-gravity models in space-times of arbitrary dimension is formulated. The gauge gravity vacuum is investigated in the *constraintless Clairaut-type formalism*.

- **DNA theory**: a new characteristic of nucleotides, the *determination degree*, which is proportional to the dipole moment, is unveiled. The concept of a *triander* is set up, which leads to a new method of visual analysis and identification of DNA.

- **Polyadic structures**: *polyadization*, i.e. exchanging binary operations with higher arity ones, is proposed as a general new approach to the algebraic structures used in physics. A polyadic analog of homomorphism, or *heteromorphism*, a mapping between algebraic structures of different arities, is introduced. The *arity invariance principle*, a manifest expression of algebraic structure in terms of operations that does not depend on their arities, is claimed. In the same way, the following new structures are defined: *higher braid groups*, *higher Coxeter groups*, unusual *polyadic fields and rings* having addition and multiplication of different arities, *polyadic integer numbers, polyadic convolution products* having multiplication and comultiplication of different arities and their corresponding *polyadic Hopf algebra* and *n-ary R-matrix*, *polyadic multistar adjoints* and *polyadic operator C^* -algebras*. The *polyadic analog of Fermat's Last Theorem* is formulated. A new class of division algebras, the *hyperpolyadic algebras*, which correspond to the binary division algebras $\mathbb{R}, \mathbb{C}, \mathbb{H}, \mathbb{O}$ (reals, complex, quaternions, octonions) are defined. A *polyadic analog of the Cayley–Dickson construction* is proposed, and a novel iterative process gives "*half-quaternions*" and "*half-octonions*". The sigma matrices and the Pauli group are generalized to higher arities, and a toy model of one-dimensional supersymmetric quantum mechanics, as a first example of *polyadic supersymmetry*, is constructed using them.

- **Quantum computing**: a new conception of quantum computing which incorporates an additional kind of uncertainty, vagueness/fuzziness, by introducing a new "*obscure" class of qudits/qubits*, is announced. A superqubit theory in super-Hilbert space is reconsidered, and a new kind of *superqubit carrying odd parity* is introduced. A new kind of quantum gates, namely *higher braiding gates*, is suggested, which lead to a special type of multiqubit entanglement that can speed up key distribution and accelerate various algorithms. A novel visualization of quantum walks in terms of newly defined objects, *polyanders*, is also proposed.

INTERESSEN

- Redakteur und Gutachter bei Wissenschaftszeitschriften

- Schreiben von Gedichten und Kurzgeschichten (14 Bücher; über 200 Veröffentlichungen)

- Gitarre spielen und Lieder komponieren (2 CDs; 1 MC, GEMA)

Münster, 26. September 2024