

# Roman Simon Hilscher

## List of Publications by Year in descending order

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89  
papers

1,085  
citations

430442

18  
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g-index

93  
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docs citations

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times ranked

156  
citing authors

#	ARTICLE	IF	CITATIONS
1	Calculus of variations on time scales: weak local piecewise Crd1 solutions with variable endpoints. <i>Journal of Mathematical Analysis and Applications</i> , 2004, 289, 143-166.	0.5	64
2	Weak maximum principle and accessory problem for control problems on time scales. <i>Nonlinear Analysis: Theory, Methods &amp; Applications</i> , 2009, 70, 3209-3226.	0.6	49
3	Disconjugacy, transformations and quadratic functionals for symplectic dynamic systems on time scales. <i>Journal of Difference Equations and Applications</i> , 2001, 7, 265-295.	0.7	42
4	A time scales version of a Wirtinger-type inequality and applications. <i>Journal of Computational and Applied Mathematics</i> , 2002, 141, 219-226.	1.1	37
5	Minimal Principal Solution at Infinity for Nonoscillatory Linear Hamiltonian Systems. <i>Journal of Dynamics and Differential Equations</i> , 2014, 26, 57-91.	1.0	32
6	Symplectic difference systems: variable stepsize discretization and discrete quadratic functionals. <i>Linear Algebra and Its Applications</i> , 2003, 367, 67-104.	0.4	30
7	Sturmian theory for linear Hamiltonian systems without controllability. <i>Mathematische Nachrichten</i> , 2011, 284, 831-843.	0.4	28
8	Reid Roundabout Theorem for Symplectic Dynamic Systems on Time Scales. <i>Applied Mathematics and Optimization</i> , 2001, 43, 129-146.	0.8	27
9	Second Order Sufficiency Criteria for a Discrete Optimal Control Problem. <i>Journal of Difference Equations and Applications</i> , 2002, 8, 573-603.	0.7	27
10	Discrete Optimal Control: Second Order Optimality Conditions. <i>Journal of Difference Equations and Applications</i> , 2002, 8, 875-896.	0.7	27
11	Comparative index and Sturmian theory for linear Hamiltonian systems. <i>Journal of Differential Equations</i> , 2017, 262, 914-944.	1.1	26
12	Rayleigh principle for linear Hamiltonian systems without controllability. <i>ESAIM - Control, Optimisation and Calculus of Variations</i> , 2012, 18, 501-519.	0.7	24
13	Principal Solutions at Infinity of Given Ranks for Nonoscillatory Linear Hamiltonian Systems. <i>Journal of Dynamics and Differential Equations</i> , 2015, 27, 137-175.	1.0	23
14	Riccati equations for abnormal time scale quadratic functionals. <i>Journal of Differential Equations</i> , 2008, 244, 1410-1447.	1.1	21
15	Applications of time scale symplectic systems without normality. <i>Journal of Mathematical Analysis and Applications</i> , 2008, 340, 451-465.	0.5	21
16	Hamiltonâ€™Jacobi theory over time scales and applications to linear-quadratic problems. <i>Nonlinear Analysis: Theory, Methods &amp; Applications</i> , 2012, 75, 932-950.	0.6	21
17	Weylâ€™Titchmarsh theory for discrete symplectic systems with general linear dependence on spectral parameter. <i>Journal of Difference Equations and Applications</i> , 2014, 20, 84-117.	0.7	20
18	Time scale symplectic systems without normality. <i>Journal of Differential Equations</i> , 2006, 230, 140-173.	1.1	19

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19	First order conditions for generalized variational problems over time scales. <i>Computers and Mathematics With Applications</i> , 2011, 62, 3490-3503.	1.4	19
20	Limit point and limit circle classification for symplectic systems on time scales. <i>Applied Mathematics and Computation</i> , 2014, 233, 623-646.	1.4	18
21	Discrete Optimal Control: The Accessory Problem and Necessary Optimality Conditions. <i>Journal of Mathematical Analysis and Applications</i> , 2000, 243, 429-452.	0.5	17
22	Nonnegativity and positivity of quadratic functionals in discrete calculus of variations: survey. <i>Journal of Difference Equations and Applications</i> , 2005, 11, 857-875.	0.7	17
23	Riccati inequality and other results for discrete symplectic systems. <i>Journal of Mathematical Analysis and Applications</i> , 2006, 322, 1083-1098.	0.5	17
24	Principal and antiprincipal solutions at infinity of linear Hamiltonian systems. <i>Journal of Differential Equations</i> , 2015, 259, 4651-4682.	1.1	17
25	Linear Hamiltonian systems on time scales: Positivity of quadratic functionals. <i>Mathematical and Computer Modelling</i> , 2000, 32, 507-527.	2.0	16
26	Discrete spectra criteria for certain classes of singular differential and difference operators. <i>Computers and Mathematics With Applications</i> , 2001, 42, 465-476.	1.4	16
27	Oscillation theorems for discrete symplectic systems with nonlinear dependence in spectral parameter. <i>Linear Algebra and Its Applications</i> , 2012, 437, 2922-2960.	0.4	16
28	Linear Hamiltonian dynamic systems on time scales: Sturmian property of the principal solution. <i>Nonlinear Analysis: Theory, Methods &amp; Applications</i> , 2001, 47, 849-860.	0.6	15
29	Disconjugacy of Symplectic Systems and Positive Definiteness of Block Tridiagonal Matrices. <i>Rocky Mountain Journal of Mathematics</i> , 1999, 29, .	0.2	15
30	Eigenvalue and oscillation theorems for time scale symplectic systems. <i>International Journal of Dynamical Systems and Differential Equations</i> , 2011, 3, 84.	0.2	14
31	Spectral and oscillation theory for general second order Sturm-Liouville difference equations. <i>Advances in Difference Equations</i> , 2012, 2012, 82.	3.5	13
32	A Generalized Index Theorem for Monotone Matrix-Valued Functions with Applications to Discrete Oscillation Theory. <i>SIAM Journal on Matrix Analysis and Applications</i> , 2013, 34, 228-243.	0.7	13
33	Nonnegativity of discrete quadratic functionals corresponding to symplectic difference systems. <i>Linear Algebra and Its Applications</i> , 2003, 375, 21-44.	0.4	12
34	Weyl-Titchmarsh Theory for Time Scale Symplectic Systems on Half Line. <i>Abstract and Applied Analysis</i> , 2011, 2011, 1-41.	0.3	12
35	Oscillation theorems and Rayleigh principle for linear Hamiltonian and symplectic systems with general boundary conditions. <i>Applied Mathematics and Computation</i> , 2012, 218, 8309-8328.	1.4	12
36	Coupled intervals in the discrete calculus of variations: necessity and sufficiency. <i>Journal of Mathematical Analysis and Applications</i> , 2002, 276, 396-421.	0.5	11

#	ARTICLE	IF	CITATIONS
37	Multiplicities of focal points for discrete symplectic systems: revisited. <i>Journal of Difference Equations and Applications</i> , 2009, 15, 1001-1010.	0.7	11
38	Eigenvalue theory for time scale symplectic systems depending nonlinearly on spectral parameter. <i>Applied Mathematics and Computation</i> , 2012, 219, 2839-2860.	1.4	11
39	Oscillation and spectral theory for linear Hamiltonian systems with nonlinear dependence on the spectral parameter. <i>Mathematische Nachrichten</i> , 2012, 285, 1343-1356.	0.4	11
40	Limit circle invariance for two differential systems on time scales. <i>Mathematische Nachrichten</i> , 2015, 288, 696-709.	0.4	11
41	Focal points and principal solutions of linear Hamiltonian systems revisited. <i>Journal of Differential Equations</i> , 2018, 264, 5541-5576.	1.1	11
42	Singular Sturmian separation theorems on unbounded intervals for linear Hamiltonian systems. <i>Journal of Differential Equations</i> , 2019, 266, 7481-7524.	1.1	11
43	Genera of conjoined bases of linear Hamiltonian systems and limit characterization of principal solutions at infinity. <i>Journal of Differential Equations</i> , 2016, 260, 6581-6603.	1.1	10
44	Nonnegativity of a discrete quadratic functional in terms of the (strengthened) legendre and jacobi conditions. <i>Computers and Mathematics With Applications</i> , 2003, 45, 1369-1383.	1.4	9
45	Coupled intervals for discrete symplectic systems. <i>Linear Algebra and Its Applications</i> , 2006, 419, 750-764.	0.4	9
46	Recessive solutions for nonoscillatory discrete symplectic systems. <i>Linear Algebra and Its Applications</i> , 2015, 469, 243-275.	0.4	9
47	A class of Sturm-Liouville difference equations: (Non)oscillation constants and property BD. <i>Computers and Mathematics With Applications</i> , 2003, 45, 961-981.	1.4	8
48	Picone type identities and definiteness of quadratic functionals on time scales. <i>Applied Mathematics and Computation</i> , 2009, 215, 2425-2437.	1.4	8
49	Oscillation criterion for half-linear differential equations with periodic coefficients. <i>Journal of Mathematical Analysis and Applications</i> , 2012, 393, 360-366.	0.5	8
50	Discrete oscillation theorems for symplectic eigenvalue problems with general boundary conditions depending nonlinearly on spectral parameter. <i>Linear Algebra and Its Applications</i> , 2018, 558, 108-145.	0.4	8
51	Singular Sturmian comparison theorems for linear Hamiltonian systems. <i>Journal of Differential Equations</i> , 2020, 269, 2920-2955.	1.1	8
52	Coupled Intervals in the Discrete Optimal Control. <i>Journal of Difference Equations and Applications</i> , 2004, 10, 151-186.	0.7	7
53	Nabla time scale symplectic systems and related quadratic functionals. <i>Differential Equations and Dynamical Systems</i> , 2010, 18, 163-198.	0.5	7
54	Symmetric Three-Term Recurrence Equations and Their Symplectic Structure. <i>Advances in Difference Equations</i> , 2010, 2010, 626942.	3.5	7

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55	Dominant and recessive solutions at infinity and genera of conjoined bases for discrete symplectic systems. <i>Journal of Difference Equations and Applications</i> , 2017, 23, 657-698.	0.7	7
56	Singular Sturmian separation theorems for nonoscillatory symplectic difference systems. <i>Journal of Difference Equations and Applications</i> , 2018, 24, 1894-1934.	0.7	6
57	Weyl disks and square summable solutions for discrete symplectic systems with jointly varying endpoints. <i>Advances in Difference Equations</i> , 2013, 2013, .	3.5	5
58	Time scale symplectic systems with analytic dependence on spectral parameter. <i>Journal of Difference Equations and Applications</i> , 2015, 21, 209-239.	0.7	5
59	Principal solutions at infinity for time scale symplectic systems without controllability condition. <i>Journal of Mathematical Analysis and Applications</i> , 2016, 444, 852-880.	0.5	5
60	Reid's Construction of Minimal Principal Solution at Infinity for Linear Hamiltonian Systems. <i>Springer Proceedings in Mathematics and Statistics</i> , 2016, , 359-369.	0.1	5
61	Rayleigh principle for time scale symplectic systems and applications. <i>Electronic Journal of Qualitative Theory of Differential Equations</i> , 2011, , 1-26.	0.2	5
62	New results for time reversed symplectic dynamic systems and quadratic functionals. , 0, , .		5
63	Inhomogeneous Quadratic Functionals on Time Scales. <i>Journal of Mathematical Analysis and Applications</i> , 2001, 253, 473-481.	0.5	4
64	Distribution and number of focal points for linear Hamiltonian systems. <i>Linear Algebra and Its Applications</i> , 2021, 611, 26-45.	0.4	4
65	Oscillation Numbers for Continuous Lagrangian Paths and Maslov Index. <i>Journal of Dynamics and Differential Equations</i> , 0, , 1.	1.0	4
66	A Remark on Discrete Quadratic Functionals with Separable Endpoints. <i>Rocky Mountain Journal of Mathematics</i> , 2003, 33, 1337.	0.2	3
67	Equivalent conditions to the nonnegativity of a quadratic functional in discrete optimal control. <i>Mathematische Nachrichten</i> , 2004, 266, 48-59.	0.4	3
68	Sturmian comparison theorems for completely controllable linear Hamiltonian systems in singular case. <i>Journal of Mathematical Analysis and Applications</i> , 2020, 487, 124030.	0.5	3
69	Lidskii angles and Sturmian theory for linear Hamiltonian systems on compact interval. <i>Journal of Differential Equations</i> , 2021, 298, 1-29.	1.1	3
70	Asymptotic properties of solutions of Riccati matrix equations and inequalities for discrete symplectic systems. <i>Electronic Journal of Qualitative Theory of Differential Equations</i> , 2015, , 1-16.	0.2	3
71	On square integrable solutions and principal and antiprincipal solutions for linear Hamiltonian systems. <i>Annali Di Matematica Pura Ed Applicata</i> , 2018, 197, 283-306.	0.5	2
72	Sufficiency and sensitivity for nonlinear optimal control problems on time scales via coercivity. <i>ESAIM - Control, Optimisation and Calculus of Variations</i> , 2018, 24, 1705-1734.	0.7	2

#	ARTICLE	IF	CITATIONS
73	Comparative index and Lidskii angles for symplectic matrices. Linear Algebra and Its Applications, 2021, 624, 174-197.	0.4	2
74	PERTURBATION OF NONNEGATIVE TIME SCALE QUADRATIC FUNCTIONALS. , 2007, , .		2
75	Discrete Quadratic Functionals with Jointly Varying Endpoints via Separable Endpoints. , 2004, , 461-470.		2
76			2
77	Eigenvalue Comparison for Discrete Symplectic Systems. Springer Proceedings in Mathematics and Statistics, 2015, , 95-107.	0.1	2
78	Comparison theorems for self-adjoint linear Hamiltonian eigenvalue problems. Mathematische Nachrichten, 2014, 287, 704-716.	0.4	1
79	Sturmian Liouville matrix differential systems with singular leading coefficient. Annali Di Matematica Pura Ed Applicata, 2017, 196, 1165-1183.	0.5	1
80	Motivation and Preliminaries. Pathways in Mathematics, 2019, , 1-81.	0.1	1
81	Transformation preserving controllability for nonlinear optimal control problems with joint boundary conditions. ESAIM - Control, Optimisation and Calculus of Variations, 2021, 27, 75.	0.7	0
82	On general Sturmian theory for abnormal linear Hamiltonian systems. , 2011, , .		0
83	Oscillation Theory of Symplectic Systems. Pathways in Mathematics, 2019, , 201-260.	0.1	0
84	Discrete Symplectic Eigenvalue Problems. Pathways in Mathematics, 2019, , 261-396.	0.1	0
85	Basic Theory of Symplectic Systems. Pathways in Mathematics, 2019, , 83-148.	0.1	0
86	Miscellaneous Topics on Symplectic Systems. Pathways in Mathematics, 2019, , 397-572.	0.1	0
87	Comparative Index Theory. Pathways in Mathematics, 2019, , 149-200.	0.1	0
88	Antiprincipal solutions at infinity for symplectic systems on time scales. Electronic Journal of Qualitative Theory of Differential Equations, 2020, , 1-32.	0.2	0
89	Weak disconjugacy, weak controllability, and genera of conjoined bases for linear Hamiltonian systems. Annali Di Matematica Pura Ed Applicata, 0, , 1.	0.5	0