

COFIL 2022 - AGENDA

International Conference on Laser Filamentation

11 - 15 July 2022, CHANIA, GREECE

Monday, July 11, 2022

8:15am - 9:15am	Conference Check-in and Registration
9:15am - 9:30am	S. Tzortzakis Welcome by the COFIL 2022 Chairman
9:30am - 10:00am	A. Mysyrowicz Applications of filaments, an overview
10:00am - 10:30am	M. Richardson, D. Reyes, H. Kerrigan, N. Bodnar, J. Peña, M. Masnavi, D. Christodouledis, LS. Smith, O. Thome, R. Bernath Perspectives on future advances in science and technology applications of propagated applications
10:30am - 11:00am	A. Ionin, N. Panov, D. Shipilo, D. Mokrousova, I. Nikolaeva, E. Mitina, G. Rizaev, A. Koribut, Y. Grudtsyn, A. Couairon, A. Houard, D. Skryabin, A. Savel'ev, L. Seleznev, O. Kosareva, S.-L. Chin Postfilament supercontinuum and discharge initiation on a 100-m path in air
11:00am - 11:30am	L. Zou, C. Sun, J. Yu, A. Couairon Reverse engineering of ultrashort laser pulse Bessel beam filaments at a remote distance in air
11:30am - 12:00pm	Coffee Break
12:00pm - 12:25pm	J. Papeer, I. Dey, Y. Hefetz, Y. Raz, A. Lad, G.R. Kumar, A. Zigler Towards remote manipulation of lightning by high power lasers
12:25pm - 12:50pm	S. Tzortzakis Taming laser filaments for applications in nonlinear THz science and materials engineering
12:50pm - 13:10pm	D. Dempsey, G.C. Nagar, R.I. Grynko, C.K. Renskers, J.-S. Sutherland, B. Shim Single-shot time-resolved visualization of ultrafast high-intensity laser-matter interactions
13:10pm - 13:30pm	P. Walch, B. Mahieu, L. Arantchouk, M. Lozano, Y.-B. André, A. Mysyrowicz, A. Houard Cumulative effect in filament guided discharges at high repetition rate
13:30pm - 14:00pm	Poster teaser presentations
	U. Andral, P. Walch, V. Moreno, B. Mahieu, T. Produit, M. Lozano, L. Bizet, C. Herkommer, M. Moret, Y-B André, P. Krotz, T. Metzger, K. Michel, A. Mysyrowicz, J. Kasparian, D. Lupinski, A. Houard, J.-P. Wolf Second and third harmonic generation from simultaneous high peak- and high average-power thin disk laser
	P. Walch, B. Mahieu, M. Lozano, Y.-B. André, L. Bizet, U. Andral, V. Moreno, T. Produit, C. Herkommer, R. Bessing, T. Metzger, J. Kasparian, J.-P. Wolf, A. Mysyrowicz, A. Houard Long distance laser filamentation using 500 mJ Yb:YAG kHz laser
	J. Peña, M. Salfer-Hobbs, L.-S. Smith, O. Thome, T. Miletich, D. Reyes, H. Kerrigan, R. Bernath, M. Richardson Effect of Atmospheric Conditions on Long Range Filamentation

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	M. Schneiderman, O. Thome, R. Bernath, D. Reyes, H. Everitt, M. Richardson Long-Wave Infrared Ultrafast Laser Spectroscopy and Filamentation
	P. Konstantakis, P. Dufour, M. Manousidaki, A. Koulouklidis, S. Tzortzakos Control of Femtosecond Laser Filamentation and Supercontinuum Generation in Liquids Using Neural Networks
	D. Neog, C. Hazarika, A. Das, S. Hazarika Optical Kerr Effect and Evolution of Dielectric Permittivity in Negative Index Materials
14:00pm - 15:00pm	<i>Lunch Break & Posters</i>
15:00pm - 15:30pm	A. Houard, P. Walch, B. Mahieu, M. Lozano, L. Bizet, Y.-B. André, A. Mysyrowicz, C. Herkommer, R. Bessing, T. Metzger, A. Sunjerga, A. Mostajabi, F. Rachidi, M. Azadifar, M. Rubinstein, O. Maurice, G. Fournier, B. Esmler, W. Haas, V. Moreno, T. Produit, U. Andral, M. Moret, J. Kasparian, J.-P. Wolf The laser lightning Rod project
15:30pm - 16:00pm	D. Psaltis Optical computing using nonlinear propagation in multimode fibers
16:00pm - 16:30pm	Y. Liu, F. Yin, T.-J. Wang, H. Guo, N. Chen, X. Zhang, H. Sun, Y. Leng, R. Li, Z. Xu, S.-L. Chin The jitter challenge of high-repetition-rate fs laser filament in air and its solution
16:30pm - 17:00pm	S.-L. Chin, X. Guo, H. Schroeder, D. Song, A. Xia, F. Kong, H. Xu, T.-J. Wang, R. Li Charging mechanism of lightning at the molecular level

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Tuesday, July 12, 2022

9:30am - 10:00am	M. Helle, G. DiComo, A. Englesbe, J. Isaacs, A. Mamonau, D. Kaganovich, R. Fischer, J. Peñano Nonlinear Self-Channeling of Ultrashort Pulses through Atmospheric Turbulence
10:00am - 10:30am	H. Kerrigan, O. Thome, J. Peña, L. Smith, D. Reyes, M. Masnavi, N. Bodnar, R. Bernath, M. Richardson Perspectives on future advances in science and technology applications of propagated applications
10:30am - 11:00am	H. Xu Air Lasing: Generation, Mechanisms and Applications
11:00am - 11:30am	E. Zaloznaya, S. Chekalin, A. Dormidonov, V. Kompanets, V. Kandidov Light bullet oscillations caused by CEP
11:30am - 12:00pm	Coffee Break
12:00pm - 12:25pm	Y. Liu Cavity free "Lasing" of nitrogen ions: from superradiance to free induction decay
12:25pm - 12:50pm	L. Bergé, C. Tailliez, X. Davoine, L. Gremillet, A. Debayle Ultrastrong Terahertz Field Emissions by Highly Magnetized, Laser-Created Plasmas
12:50pm - 13:10pm	L.-S. Smith, J. Peña, D. Reyes, H. Kerrigan, N. Bodnar, R. Bernath, M. Richardson Spatio-Temporal Filament Structures for Long Range Propagation
13:10pm - 13:30pm	V. Shumakova, E. Schubert, S. Ališauskas, D. Mongin, M. Matthews, T. Balčiūnas, E. Kaksis, P. Carpeggiani, E. Gangrskaja, A. Pugžlys, J. Kasparian, A. Baltuška, J.-P. Wolf Laser-Induced Aerosol Formation Triggered by Mid-IR Filaments
13:30pm - 14:00pm	Poster teaser presentations
	M. Schroeder, U. Andral, J.-P. Wolf Opto-mechanical expulsion of individual micro-particles by laser induced shockwave in air
	C. Daskalaki, A. Koulouklidis, V. Fedorov, C. Lanara, S. Tzortzakis Gas Dynamics Restoration on Laser Filamentation at High Repetition Rates
	R. Danylo, G. Lambert, X. Zhang, A. Houard, Y. Liu, V. Tikhonchuk, A. Mysyrowicz Population distribution following excitation of N ₂ with an intense femtosecond laser pulse at 800 nm
	J. Peña, D. Reyes, L.-S. Smith, H. Kerrigan, N. Bodnar, R. Bernath, M. Richardson Filament Formation and Propagation at Low Pressures
	C. Zhuang, X. Zhang, Q. Lu, Y. Liu Optical Amplification and Gain Dynamics of Cavity-free Lasing of Argon Pumped by Ultraviolet Femtosecond Pulses

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	<u>E. Zaloznaya, I. Geints</u> Group velocity dispersion effect on the anti-Stokes broadening of a pulse spectrum
	<u>H. Zang, H. Li, H. Xu</u> Ignition of a premixed methane/air gas flow by femtosecond laser filament
14:00pm - 15:00pm	<i>Lunch Break & Posters</i>
15:00pm - 15:30pm	<u>M. Schroeder, U. Andral, T. Produit, G. Schimmel, J. Kasparian, J.-P. Wolf</u> Filaments Break through Fog and Clouds for Free Space Optical Communication
15:30pm - 16:00pm	<u>V. Jukna, R. Grigutis, M. Navickas, G. Tamošauskas, A. Dubietis</u> Supercontinuum generation, conical third harmonic emission and optical damage in bulk materials with high repetition rate laser pulses
16:00pm - 16:30pm	<u>T.-J. Wang, M. Ebrahim, I. Afxenti, D. Adamou, C. Milián, A. Dada, R. Li, Y. Leng, J.-C. Diels, D. Faccio, A. Couairon, M. Clerici</u> Cumulative effects in high-repetition-rate filaments
16:30pm - 17:30pm	<u>R. Boyd (Plenary Talk)</u> Control of Laser-Beam Self-Focusing, Filamentation, and Rogue-Wave Formation Using Structured Light Beams
17:30pm - 18:30pm	<i>Cretan Wine & Cheese Tasting</i>

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Wednesday, July 13, 2022

9:30am - 10:00am	O. Kosareva, N. Panov, D. Shipilo, I. Nikolaeva, D. Pushkarev, G. Rizaev, D. Mokrousova, A. Koribut, Y. Grudtsyn, L. Seleznev, W. Liu, A. Ionin Terahertz radiation from a single color filament in DC-biased and transition regimes
10:00am - 10:30am	A. Zheltikov Cross-range nonlinear optics with laser filaments
10:30am - 11:00am	N. Zhang, Z. Yu, Z. Zhang, W. Liu High Energy THz Pulse Generation by Filamentation in Gases and Broadband THz Detection at High Repetition Rate
11:00am - 11:30am	A. Pugžlys, C. Gollner, R. Jutas, D. Kreil, D. Dirin, S. Boehme, V. Shumakova, A. Baltuška, M. Kovalenko, A. Koulouklidis, V. Fedorov, S. Tzortzakis Generation of Strong, Mid-IR Driven THz radiation and Applications for Nonlinear Perturbation of Matter
11:30am - 12:00pm	Coffee Break
12:00pm - 12:25pm	D. Mokrousova, L. Seleznev, G. Rizaev, D. Pushkarev, I. Nikolaeva, D. Shipilo, N. Panov, W. Liu, A. Ionin, O. Kosareva Axially asymmetric THz pattern from single-color filament
12:25pm - 12:50pm	A. Koulouklidis, A. Tasolamprou, S. Doukas, E. Kyriakou, C. Daskalaki, M. Ergoktas, E. Economou, E. Lidorikis, M. Kafesaki, C. Kocabas, S. Tzortzakis Ultrafast THz Self-induced Actions on a Graphene Based Thin Film Absorber
12:50pm - 13:10pm	A. Englesbe, M. Helle, D. Gordon Microwave versus Terahertz Generation from Two-Color Ultrashort Laser-Produced Plasmas
13:10pm - 13:30pm	J. Moody, G. Demeter, M. Kedves, A. Bachmann, F. Batsch, M. Bergamaschi, V. Fedosseev, E. Granados, M. Kerscher, P. Muggli, H. Panuganti, G. Zevi Della Porta Terawatt, resonant laser pulse propagation in atomic vapor
13:30pm - 14:00pm	Poster teaser presentations
	S. Fu, B. Mahieu, A. Mysyrowicz, A. Houard Filamentation of Vortex beam in air for the generation of tubular plasma
	E. Mitina, D. Uryupina, D. Pushkarev, D. Shipilo, I. Nikolaeva, N. Panov, O. Kosareva, A. Savel'ev THz radiation of a long DC-biased multiple filament of femtosecond terawatt laser pulses over an atmospheric path
	D. Pushkarev, N. Zhidovtsev, D. Uryupina, E. Mitina, R. Volkov, Y. Geints, O. Kosareva, A. Savel'ev IR supercontinuum wing enhancement via controlled and stochastic filament merging
	S. Wang, Z. Fan, C. Lu, V. Kostion, Y. Liu Coherently controlled ionization of gases by three-color femtosecond laser pulses

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	H. Li, S. Chen, X. Cong, H. Zang, H. Xu Sensing Heavy-Metal Contaminants in Water by Filament-Induced Breakdown Spectroscopy
	P. Ding, M. Ruchkina, C. Brackmann, Z. Zhu, B. Hu, J. Bood Femtosecond deep-UV laser-induced superfluorescence from atomic oxygen in combustion flame
14:00pm - 15:00pm	<i>Lunch Break & Posters</i>
15:00pm - 15:30pm	P. Polynkin Filamentation of short- and mid-infrared, ultrashort-pulse laser beams in gases
15:30pm - 16:00pm	J.-C. Diels, A. Rastegari, A. Aceves, N. Bagley Filaments 2022: Fast and slow dynamics and the challenges they present in understanding filamentation
16:00pm - 16:30pm	O. Finke, J. Vábek, M. Nevrkla, N. Bobrova, O. Hort, M. Jurkovič, M. Albrecht, A. Jančárek, J. Nejd, F. Catoire, S. Skupin Absorption-limited XUV generation in noble gases
16:30pm - 17:00pm	G. Bruhaug, H. Rinderknecht, M. Wei, G. Collins, J. Rygg, Y. E, K. Garriga, X.-C. Zhang Extreme THz Science with Ultra-Intense Laser Induced Plasma

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Thursday, July 14, 2022

9:30am - 10:00am	S. Nolte, N. Alasgarzade, A. Alberucci, M. Blothe, C. Jisha, G. Matthäus, M. Chambonneau Ultrashort Pulse Laser Processing of Silicon
10:00am - 10:30am	A. Wang, A. Das, D. Grojo Influence of filamentation on laser-induced modifications deep inside gallium arsenide
10:30am - 11:00am	M. Chambonneau Domesticating micro-filamentation in silicon for ultrafast laser welding applications
11:00am - 11:30am	D. Bongio, Z. Zhang, R. Morandotti, N. Efremidis, Z. Chen Realization of steady optical beams against turbulence
11:30am - 12:00pm	Coffee Break
12:00pm - 12:25pm	F. Courvoisier, B. Morel, P. Charpin, M. Hassan, K. Ardaneh, V. Belloni, R. Meyer, L. Furfaro, L. Froehly, R. Giust Ultrafast Bessel beam-induced nanoplasmas in solid dielectrics
12:25pm - 12:50pm	V. Fedorov, S. Tzortzakis Quantum mechanical description of semiconductors for strong laser field propagation studies
12:50pm - 13:10pm	M. Bellec Direct-laser-writing in glass chips and optical fibers: From topological photonics to arbitrary long waveguides
13:10pm - 13:30pm	H. Wang, Y. Lei, C. Deng, G. Shayeganrad, P. Kazansky Anomalously efficient high-speed ultrafast laser writing in glass
13:30pm - 14:00pm	Poster teaser presentations
	E. Iordanova, G. Yankov, S. Karatodorov, L. Kovachev Linear and nonlinear wave guiding of femtosecond pulses in air
	M. Blothe, M. Chambonneau, S. Nolte Back surface amorphization of silicon with picosecond infrared laser pulses
	A. Giakas, M. Edwards, N. Fasano, B. O'Brien, J. Griff-McMahon, I. Tigges-Green, A. Hankla, T. Bennett, J. Mikhailova Spectral and Spatial Transformations of Terawatt Laser Beams in Low-Pressure Gases
	Y. Lei, G. Shayeganrad, H. Wang, C. Deng, P. Kazansky Efficient anisotropic nanostructuring of fused silica by elliptically polarized ultrafast laser pulses
	V. Marčiulionytė, V. Jukna, G. Tamošauskas, A. Matijošius, S. Butkus, M. Barkauskas, A. Dubietis Filamentation and supercontinuum generation in solids with burst trains of femtosecond pulses
	A. Kuznetsov, V. Kompanets, S. Chekalin, A. Dormidonov, V. Kandidov The Role of Exciton and Plasma Channels of Color Centers Generation in Multi-Pulse Laser Filamentation in LiF



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14:00pm - 15:00pm	<i>Lunch Break & Posters</i>
15:00pm - 15:30pm	<u>I. Babushkin</u> Subcycle dynamics of ionization revealed via polarization of THz and 3rd harmonics
15:30pm - 16:00pm	<u>G. Steinmeyer</u>, <u>T. Nagy</u>, <u>I. Babushkin</u>, <u>C. Mei</u> Taming light bullets
16:00pm - 16:30pm	<u>P. B�ejot</u>, <u>J. Kasparian</u> Self-phase modulation, four-wave mixing and energy conservation: Why n_2 has to be positive
16:30pm - 17:00pm	<u>I. Larkin</u>, <u>A. Goffin</u>, <u>A. Valenzuela</u>, <u>E. Rosenthal</u>, <u>A. Tartaro</u>, <u>A. Schweinsberg</u>, <u>H. Milchberg</u> Optical guiding in 50-meter-long air waveguides
20:30pm - 11:00pm	<i>Conference Dinner</i>

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Friday, July 15, 2022

Special session on nonlinear optical thermodynamics

9:30am - 10:30am	D. Christodoulides (<i>Plenary Talk</i>) Optical thermodynamics of nonlinear highly multimode systems
10:30am - 11:00am	S. Flach, M. Malishava Novel thermalization classes of weakly nonintegrable many-body systems
11:00pm - 11:30pm	G. Tsironis Dynamical, spectral and thermal properties of discrete nonlinear networks
11:30am - 12:00pm	Coffee Break
12:00pm - 12:30pm	B. Rumpf The statistical mechanics of the discrete nonlinear Schrödinger equation: entropy, phase transition, coherent structures and metastable states
12:30pm - 13:00pm	N. Efremidis, D. Christodoulides The role of system parameters in the thermodynamics of multimoded optical settings: A direct application in defining optomechanical pressure in photonic lattices
13:00pm - 13:30pm	F. Mangini, M. Ferraro, M. Gervaziev, D. Kharenko, M. Zitelli, E. Podivilov, S. Babin, S. Wabnitz Classical wave thermalization in multimode optical fibers: an experimental platform for validating the thermodynamic theory
13:30pm - 14:00pm	K. Makris Fluctuations in nonlinear optical supermode gases
14:00pm - 15:00pm	Lunch Break
15:00pm - 15:30pm	T. Kottos Optical beam thermalization in non-linear multimode fibers
15:30am - 16:00am	N. Bender Direct observations of thermalization to a Rayleigh–Jeans distribution in multimode optical fibers
16:00pm - 16:30pm	Z. Musslimani Optical thermalization in disordered and quasi-periodic nonlinear lattices
16:30pm - 17:00pm	M. Khajavikhan Thermalized light in optical mesh lattices
17:00pm	Closing Remarks