



Sistema Integral de Información Académica
Coordinación de Planeación, Evaluación y
Simplificación de la Gestión Institucional
Reporte individual



ALEJANDRO CRUZ OSORIO

Datos Generales

Nombre: ALEJANDRO CRUZ OSORIO

Máximo nivel de estudios: DOCTORADO

Antigüedad académica en la UNAM: 2 años

Nombramientos

Vigente: INVESTIGADOR ASOCIADO C TC No Definitivo
Instituto de Astronomía
Desde 16-09-2023

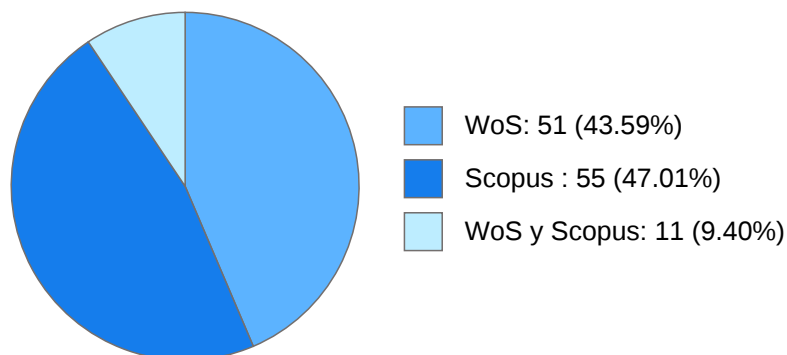
Estímulos, programas, premios y reconocimientos

SNI I 2017 - VIGENTE
EQUIVALENCIA PRIDE B 2023 - 2024

ALEJANDRO CRUZ OSORIO

DOCUMENTOS EN REVISTAS

Histórico de Documentos



#	Título	Autores	Revista	Año
1	Black hole accretion and radiation variability in general relativistic magnetohydrodynamic simulations with Rezzolla-Zhidenko spacetime	ALEJANDRO CRUZ OSORIO Moriyama K. Mizuno Y. et al.	ASTRONOMY & ASTROPHYSICS	2025
2	A multifrequency study of sub-parsec jets with the Event Horizon Telescope	JOSE LUIS GOMEZ MARQUEZ ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD et al.	ASTRONOMY & ASTROPHYSICS	2025
3	Observations of compact stars and fermion-boson stars with a quartic self-interaction	ALEJANDRO CRUZ OSORIO Susana Valdez-Alvarado J. M. Davila et al.	CLASSICAL AND QUANTUM GRAVITY	2025
4	Shadow and gravitational lensing produced by the nonlinear accretion of a scalar field onto a black hole	FABIO DUVAN LORA CLAVIJO ALEJANDRO CRUZ OSORIO Acevedo-Muñoz J.C.	PHYSICAL REVIEW D	2025
5	Modelling the shadow of Sgr A* through an eclipsing black hole	MILTON JAIR SANTIBAÑEZ ARMENTA GUSTAVO MAGALLANES GUIJON SERGIO MENDOZA RAMOS et al.	MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY	2025
6	The impact of resistivity on the variability of black hole accretion flows	ALEJANDRO CRUZ OSORIO Nathanail A. Mizuno Y. et al.	ASTRONOMY & ASTROPHYSICS	2025

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7	The persistent shadow of the supermassive black hole of M87: II. Model comparisons and theoretical interpretations	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD Akiyama K. et al.	ASTRONOMY & ASTROPHYSICS	2025
8	Broadband multi-wavelength properties of M87 during the 2018 EHT campaign including a very high energy flaring episode	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD EDNA LOREDANA RUIZ VELASCO et al.	ASTRONOMY & ASTROPHYSICS	2024
9	The persistent shadow of the supermassive black hole of M 87: I. Observations, calibration, imaging, and analysis*	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD Akiyama K. et al.	ASTRONOMY & ASTROPHYSICS	2024
10	Future Prospects for Constraining Black Hole Spacetime: Horizon-scale Variability of Astrophysical Jets	ALEJANDRO CRUZ OSORIO Kotaro Moriyama Yosuke Mizuno et al.	ASTROPHYSICAL JOURNAL	2024
11	Ordered magnetic fields around the 3C 84 central black hole	ALEJANDRO CRUZ OSORIO Paraschos G.F. Kim J.-Y. et al.	ASTRONOMY & ASTROPHYSICS	2024
12	Impact of anisotropic ejecta on jet dynamics and afterglow emission in binary neutron-star mergers	ALEJANDRO CRUZ OSORIO Mpisketzis V. Duqué R. et al.	MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY	2024
13	First Sagittarius A* Event Horizon Telescope Results. VII. Polarization of the Ring	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD Akiyama K. et al.	ASTROPHYSICAL JOURNAL LETTERS	2024
14	First Sagittarius A* Event Horizon Telescope Results. VIII. Physical Interpretation of the Polarized Ring	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD Akiyama K. et al.	ASTROPHYSICAL JOURNAL LETTERS	2024
15	Magnetized tori with magnetic polarization around Kerr black holes: Variable angular momentum disks	ALEJANDRO CRUZ OSORIO Gimeno-Soler S. Pimentel O.M. et al.	PHYSICAL REVIEW D	2024
16	Impacts of nonthermal emission on the images of a black hole shadow and extended jets in two-temperature GRMHD simulations	ALEJANDRO CRUZ OSORIO Mingyuan Zhang Yosuke Mizuno et al.	ASTRONOMY & ASTROPHYSICS	2024
17	Long-lived Equilibria in Kinetic Astrophysical Plasma Turbulence	ALEJANDRO CRUZ OSORIO Mario Imbrogno Claudio Meringolo et al.	ASTROPHYSICAL JOURNAL LETTERS	2024
18	First Very Long Baseline Interferometry Detections at 870 μ m	ALEJANDRO CRUZ OSORIO Raymond A.W. Doeleman S.S. et al.	ASTRONOMICAL JOURNAL	2024
19	Polarimetric Geometric Modeling for mm-VLBI Observations of Black Holes	ALEJANDRO CRUZ OSORIO Freek Roelofs Michael D. Johnson et al.	ASTROPHYSICAL JOURNAL LETTERS	2023

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20	A Search for Pulsars around Sgr A* in the First Event Horizon Telescope Data Set	ALFREDO HERRERA AGUILAR ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD et al.	ASTROPHYSICAL JOURNAL	2023
21	The Event Horizon Telescope Image of the Quasar NRAO 530	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD Svetlana Jorstad et al.	ASTROPHYSICAL JOURNAL	2023
22	First M87 Event Horizon Telescope Results. IX. Detection of Near-horizon Circular Polarization	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD Akiyama K. et al.	ASTROPHYSICAL JOURNAL LETTERS	2023
23	Impact of non-thermal particles on the spectral and structural properties of M87	ALEJANDRO CRUZ OSORIO Fromm C.M. Mizuno Y. et al.	ASTRONOMY & ASTROPHYSICS	2022
24	State-of-the-art energetic and morphological modelling of the launching site of the M87 jet	ALEJANDRO CRUZ OSORIO Fromm C.M. Mizuno Y. et al.	Nature Astronomy	2022
25	The Variability of the Black Hole Image in M87 at the Dynamical Timescale	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD Kaushik Satapathy et al.	ASTROPHYSICAL JOURNAL	2022
26	First Sagittarius A* Event Horizon Telescope Results. IV. Variability, Morphology, and Black Hole Mass	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD IGNACIO RUIZ LOPEZ et al.	ASTROPHYSICAL JOURNAL LETTERS	2022
27	First Sagittarius A* Event Horizon Telescope Results. II. EHT and Multiwavelength Observations, Data Processing, and Calibration	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD IGNACIO RUIZ LOPEZ et al.	ASTROPHYSICAL JOURNAL LETTERS	2022
28	First Sagittarius A* Event Horizon Telescope Results. VI. Testing the Black Hole Metric	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD IGNACIO RUIZ LOPEZ et al.	ASTROPHYSICAL JOURNAL LETTERS	2022
29	A Universal Power-law Prescription for Variability from Synthetic Images of Black Hole Accretion Flows	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD IGNACIO RUIZ LOPEZ et al.	ASTROPHYSICAL JOURNAL LETTERS	2022
30	First Sagittarius A* Event Horizon Telescope Results. III. Imaging of the Galactic Center Supermassive Black Hole	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD IGNACIO RUIZ LOPEZ et al.	ASTROPHYSICAL JOURNAL LETTERS	2022
31	Selective Dynamical Imaging of Interferometric Data	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD Joseph Farah et al.	ASTROPHYSICAL JOURNAL LETTERS	2022
32	GW190521 formation scenarios via relativistic accretion	ALEJANDRO CRUZ OSORIO FABIO DUVAN LORA CLAVIJO Herdeiro C.	JOURNAL OF COSMOLOGY AND ASTROPARTICLE PHYSICS	2021

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33	Comparison of Kerr and dilaton black hole shadows	ALEJANDRO CRUZ OSORIO Röder J. Fromm C.M. et al.	36TH INTERNATIONAL COSMIC RAY CONFERENCE, ICRC2019	2021
34	First M87 Event Horizon Telescope Results. VIII. Magnetic Field Structure near The Event Horizon	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD Kazunori Akiyama et al.	ASTROPHYSICAL JOURNAL LETTERS	2021
35	First M87 Event Horizon Telescope Results. VII. Polarization of the Ring	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD Kazunori Akiyama et al.	ASTROPHYSICAL JOURNAL LETTERS	2021
36	Polarimetric Properties of Event Horizon Telescope Targets from ALMA	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD JOSE ANTONIO HERNANDEZ GOMEZ et al.	ASTROPHYSICAL JOURNAL LETTERS	2021
37	The Polarized Image of a Synchrotron-emitting Ring of Gas Orbiting a Black Hole	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD Ramesh Narayan et al.	ASTROPHYSICAL JOURNAL	2021
38	Constraints on black-hole charges with the 2017 EHT observations of M87*	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD Prashant Kocherlakota et al.	PHYSICAL REVIEW D	2021
39	Broadband Multi-wavelength Properties of M87 during the 2017 Event Horizon Telescope Campaign	ALEJANDRO CRUZ OSORIO LAURENT RAYMOND LOINARD EDNA LOREDANA RUIZ VELASCO et al.	ASTROPHYSICAL JOURNAL LETTERS	2021
40	Event Horizon Telescope observations of the jet launching and collimation in Centaurus A	JOSE LUIS GOMEZ MARQUEZ ALEJANDRO CRUZ OSORIO ALFREDO FERNANDO FUENTES GUTIERREZ et al.	Nature Astronomy	2021
41	Neutron and quark stars: constraining the parameters for simple EoS using the GW170817	ALEJANDRO CRUZ OSORIO FABIO DUVAN LORA CLAVIJO Griselda Arroyo-Chavez et al.	ASTROPHYSICS AND SPACE SCIENCE	2020
42	Common-envelope Dynamics of a Stellar-mass Black Hole: General Relativistic Simulations	ALEJANDRO CRUZ OSORIO Rezzolla L.	ASTROPHYSICAL JOURNAL	2020
43	Anisotropic quark stars with an interacting quark equation of state	FABIO DUVAN LORA CLAVIJO ALEJANDRO CRUZ OSORIO Becerra-Vergara E.A. et al.	PHYSICAL REVIEW D	2019
44	Relativistic Bondi-Hoyle-Lyttleton accretion in the presence of small rigid bodies around a black hole	ALEJANDRO CRUZ OSORIO FRANCISCO JAVIER SANCHEZ SALCEDO Lora-Clavijo, F. D.	MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY	2017

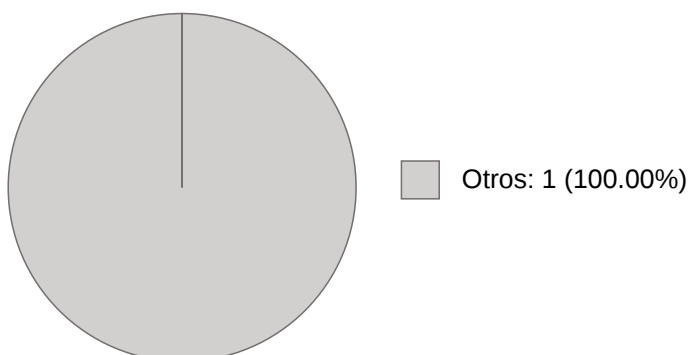
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45	Non-axisymmetric relativistic wind accretion with velocity gradients on to a rotating black hole	ALEJANDRO CRUZ OSORIO Lora-Clavijo, F. D.	MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY	2016
46	RELATIVISTIC BONDI-HOYLE-LYTTLETON ACCRETION onto A ROTATING BLACK HOLE: DENSITY GRADIENTS	F. D. LoraClavijo ENRIQUE MORENO MENDEZ ALEJANDRO CRUZ OSORIO	ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES	2015
47	Newtonian cafe: A new ideal MHD code to study the solar atmosphere	ALEJANDRO CRUZ OSORIO GonzalezAviles, J. J. LoraClavijo, F. D. et al.	MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY	2015
48	CAFE: A NEW RELATIVISTIC MHD CODE	ALEJANDRO CRUZ OSORIO Lora-Clavijo F.D. Guzmán F.S.	ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES	2015
49	The shocks during the accretion of an ultrarelativistic supersonic gas onto a rotating black hole	ALEJANDRO CRUZ OSORIO Lora-Clavijo F.D. Guzmán F.S.	AIP Conference Proceedings	2013
50	PBH mass growth through radial accretion during the radiation dominated era	F. D. Lora Clavijo ALEJANDRO CRUZ OSORIO Guzman, F. S.	JOURNAL OF COSMOLOGY AND ASTROPARTICLE PHYSICS	2013
51	Is the flip-flop behaviour of accretion shock cones on to black holes an effect of coordinates?	ALEJANDRO CRUZ OSORIO Lora-Clavijo F.D. Guzmán F.S.	MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY	2012
52	Numerical solution of the wave equation on 1+1 Minkowski space-time with scri-fixing conformal compactification	ALEJANDRO CRUZ OSORIO Lora-Clavijo F.D. Guzmán F.S.	AIP Conference Proceedings	2010
53	Evolution of a massless test scalar field on boson star space-times	ALEJANDRO CRUZ OSORIO Lora-Clavijo F.D. Guzmán F.S.	PHYSICAL REVIEW D	2010
54	Numerical solution of the wave equation on particular space-times using CMC slices and scri-fixing conformal compactification	ALEJANDRO CRUZ OSORIO González-Juárez A. Guzmán F.S. et al.	REVISTA MEXICANA DE FISICA	2010
55	Is the flip-flop behaviour of accretion shock cones on to black holes an effect of coordinates	ALEJANDRO CRUZ OSORIO Lora-Clavijo F.D. Guzmán F.S.	Iau Symposium Proceedings Series	2009

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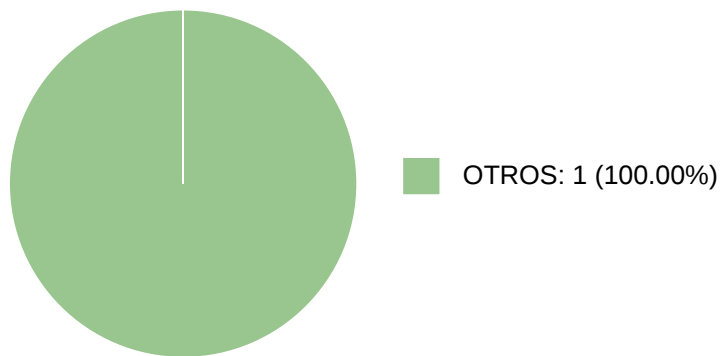


#	Título	Autores	Alcance	Año	ISBN
1	Machine Learning for interferometric image reconstruction with sparse arrays	JOEL SANCHEZ BERMUDEZ ALEJANDRO CRUZ OSORIO JORGE KAROLT BARRERA BALLESTEROS et al.	Conferenc e Paper	2024	9781510675131

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PARTICIPACIÓN EN PROYECTOS

Histórico de participación en proyectos

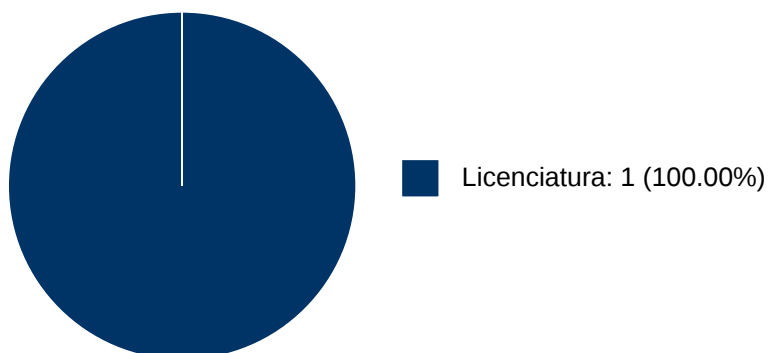


#	Nombre	Participantes	Fuente	Fecha inicio	Fecha fin
1	Sombras de agujeros negros y jets relativistas como laboratorios para probar teorías de la gravedad, propiedades del plasma en discos de acreción y la aceleración de partículas.	ALEJANDRO CRUZ OSORIO	Recursos CONAHCyT	27-05-2024	26-05-2027

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PARTICIPACIÓN EN TESIS

Histórico de Colaboraciones en Tesis

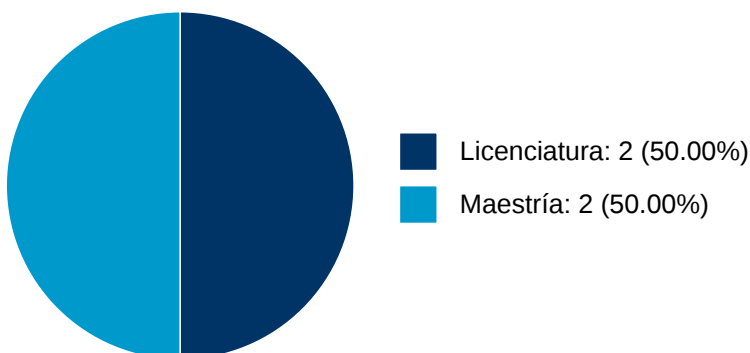


#	Título del documento	Tipo de Tesis	Sinodales	Autores	Entidad	Año
1	Estudio numérico de estrellas de quarks relativistas	Tesis de Licenciatura	ALEJANDRO CRUZ OSORIO,	García Mora, Luis Alejandro,		2019

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DOCENCIA IMPARTIDA

Histórico de docencia



#	Nivel titulación	Asignatura	Entidad	Alumnos	Semestre
1	Licenciatura	RELATIVIDAD	Facultad de Ciencias	20	2024-2
2	Maestría	SEMINARIO DE INVESTIGACIÓN I DE LOS CAMPOS DE CONOCIMIENTO TEÓRICA, OBSERVACIONAL, CAMPOS PART	Instituto de Astronomía	1	2024-2
3	Maestría	TEMAS SELECTOS DE ASTROFÍSICA DE LOS CAMPOS DE CONOCIMIENTO TEÓRICA, OBSERVACIONAL, CAMPOS PART MAGNETOHIDRODINÁMICA RELATIVISTA NUMÉRICA	Instituto de Astronomía	2	2024-2
4	Licenciatura	RELATIVIDAD	Facultad de Ciencias	4	2016-2



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PATENTES

No se encuentran registros en la base de datos de patentes asociados a:

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FUENTES DE INFORMACIÓN

Internos

#	Información	Fuente	Sistema	Periodo
1	Grupos ordinarios y resumen de historias académicas	DGAE	SIAE	2008-2025
2	Nombramientos, datos generales, estímulos, premios y reconocimientos	DGAPA	RUPA	2008-2025
3	Producción Académica	CH	Humanindex	2008-2021
4	Producción Académica	CIC	SCIC	2000-2017
5	Proyectos	DGPO	SISEPRO	2018-2022
6	Tesis	DGB	TESIUNAM	2008-2025
7	Tutorías en Posgrado	CGEP	SIIPosgrado	2008-2021

Externos

#	Información	Fuente	Sistema	Periodo
8	Documentos Indexados	Elsevier	Scopus	2008-2025
9	Documentos Indexados	Thomson Reuters	WoS	2008-2025
10	Obras con registro ISBN	INDAUTOR	Agencia ISBN	2008-2025
11	Patentes	IMPI	SIGA	2008-2024