COASTEPS

Kick-off meeting 2018A

24 y 25 Mayo 2018
Palma

GOBIERNO DE ESPAÑA
MINISTERIO DE AGRICULTURA, ALIMENTACIÓN Y MEDIO AMBIENTE
AEMet Agencia Estatal de Meteorología

UIB Universitat de les Illes Balears

MINISTERIO DE ECONOMÍA, INDUSTRIA Y COMPETITIVIDAD
AGENCIA ESTATAL DE INVESTIGACIÓN

EUROPEAN UNION
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Agenda

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MINISTERIO
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AGENCIA ESTATAL DE INVESTIGACIÓN

DIVISIÓN DE PROGRAMACIÓN
Y GESTIÓN ECONÓMICA Y
ADMINISTRATIVA

SUBDIVISIÓN DE PLANIFICACIÓN Y
GESTIÓN ADMINISTRATIVA

NOTIFICACIÓN SOBRE LA PROPUESTA DE RESOLUCIÓN PROVISIONAL Y TRÁMITE DE AUDIENCIA DE LA CONVOCATORIA 2017 PROYECTOS DE I+D+i, DEL PROGRAMA ESTATAL DE INVESTIGACION, DESARROLLO E INNOVACION ORIENTADA A LOS RETOS DE LA SOCIEDAD

Referencia:	CGL2017-82868-R
Entidad solicitante:	UNIVERSIDAD DE LAS ISLAS BALEARES
Centro:	DPTO. FISICA
Título:	FENOMENOS METEOROLOGICOS SEVEROS EN ZONAS COSTERAS MEDITERRANEAS: RETOS DE PREDICTIBILIDAD Y ANALISIS CLIMATICO
Duración en años:	3

De acuerdo con lo dispuesto en la ORDEN ECC/1780/2013, de 30 de septiembre, se aprobaron las bases reguladoras para la concesión de ayudas públicas del Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad, en el marco del Plan Estatal de Investigación Científica y Técnica y de Innovación 2013-2016, a la vista del informe elevado por la Comisión de Evaluación, esta Subdivisión de Planificación y Gestión Administrativa, como órgano instructor de la convocatoria, ha dictado la correspondiente PROPUESTA DE RESOLUCIÓN PROVISIONAL, que se ha publicado en la sede electrónica del Ministerio de Economía, Industria y Competitividad, (https://sede.micinn.gob.es), según lo dispuesto en el punto 2 del artículo 17 de la resolución de convocatoria, junto con los correspondientes anexos de solicitudes estimadas y desestimadas para financiación.

La propuesta a su solicitud de ayuda para el proyecto de investigación de referencia **CGL2017-82868-R** ha recibido la calificación **A.**

Anexo: Observaciones de la comisión de evaluación

a) Calidad científico-técnica, relevancia y viabilidad de la propuesta

La presente propuesta pretende mejorar la capacidad de predecir a corto plazo una serie de eventos meteorológicos extremos con alto impacto socioeconómico en áreas costeras del Mediterráneo, además de mejorar tanto la comprensión de los mecanismos físicos implicados en el desarrollo de dichos fenómenos como la capacidad de simulación/ predicción de los mismos. Es, por tanto, adecuada para esta convocatoria.
El proyecto de investigación, como norma general, está bien fundamentado desde un punto de vista teórico y plantea de forma correcta tanto las hipótesis de partida como la propuesta de trabajo.
Surgen algunas dudas sobre la parte relacionada con la definición de medicanes y su comportamiento en escenarios climáticos (tareas 3 y 6), ya que no está garantizada la obtención de todos los datos y tampoco se señalan estrategias alternativas para el caso de que finalmente no se puedan obtener.

b) Calidad, trayectoria y adecuación del equipo de investigación

El equipo de investigación cuenta con amplia experiencia tanto desde un punto de vista investigador como desde un punto de vista de gestión en el desarrollo de proyectos con temáticas semejantes a la de la presente memoria. El número de publicaciones de los investigadores del proyecto en revistas internacionales con alto nivel de impacto es elevado así como la dirección o la participación en otros proyectos de investigación previos.

Anexo: Observaciones de la comisión de evaluación

c) Impacto científico-técnico o internacional de la propuesta

El proyecto puede contribuir al avance del conocimiento en continuar las mejoras para el cálculo de sensibilidades de fenómenos extremos y la toma de decisiones para estrategias de observación, analizar las fuentes de vapor de agua relevantes para estos episodios, mejorar la comprensión de los MEDICANES y su evolución futura, en la línea del proyecto internacional HYMEX.
El presupuesto se considera sobredimensionado en alguno de sus apartados, especialmente en el de personal. Teniendo en cuenta estas consideraciones, el carácter competitivo de la convocatoria y las disponibilidades presupuestarias se propone una reducción moderada del presupuesto.
A pesar de la capacidad formadora del equipo, la propuesta no ha alcanzado la suficiente prioridad para optar a un contrato predoctoral para la formación de doctores dada su valoración, la información aportada en la memoria técnica referida a la capacidad formativa del equipo y el número de contratos disponibles.

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ANEXO II. RELACIÓN DE AYUDAS PROPUESTAS PARA FINANCIACIÓN – DATOS ECONÓMICOS – PROYECTOS DE I+D+I (RETOS) - CONVOCATORIA 2017

REFERENCIA	Propuesta de financiación											
	Presupuesto total concedido (1)	Por concepto de gasto		Por tipo de financiación		Por anualidades y tipo de financiación						
						2018			2019	2020	2021	
		Costes directos	Costes indirectos	Anticipo reembolsable (2)	Subvención	Subvención	Anticipo reembolsable	Total	Subvención	Subvención	Subvención	
BIO2017-89754-C2-1-R	254.100,00	210.000,00	44.100,00	127.050,00	127.050,00	12.705,00	127.050,00	139.755,00	38.115,00	76.230,00	0,00	
BIO2017-89754-C2-2-R	242.000,00	200.000,00	42.000,00	121.000,00	121.000,00	12.100,00	121.000,00	133.100,00	36.300,00	72.600,00	0,00	
BIO2017-89874-R	121.000,00	100.000,00	21.000,00	0,00	121.000,00	12.100,00	0,00	12.100,00	36.300,00	72.600,00	0,00	
BIO2017-90056-R	302.500,00	250.000,00	52.500,00	0,00	302.500,00	30.250,00	0,00	30.250,00	90.750,00	181.500,00	0,00	
CGL2017-82169-C2-1-R	133.100,00	110.000,00	23.100,00	0,00	133.100,00	13.310,00	0,00	13.310,00	39.930,00	79.860,00	0,00	
CGL2017-82169-C2-2-R	133.100,00	110.000,00	23.100,00	0,00	133.100,00	13.310,00	0,00	13.310,00	39.930,00	79.860,00	0,00	
CGL2017-82216-R	229.900,00	190.000,00	39.900,00	0,00	229.900,00	11.495,00	0,00	11.495,00	22.990,00	80.465,00	114.950,00	
CGL2017-82254-R	83.490,00	69.000,00	14.490,00	66.792,00	16.698,00	1.669,80	66.792,00	68.461,80	5.009,40	10.018,80	0,00	
CGL2017-82264-R	96.800,00	80.000,00	16.800,00	77.440,00	19.360,00	1.936,00	77.440,00	79.376,00	5.808,00	11.616,00	0,00	
CGL2017-82331-R	108.900,00	90.000,00	18.900,00	0,00	108.900,00	10.890,00	0,00	10.890,00	32.670,00	65.340,00	0,00	
CGL2017-82703-R	133.100,00	110.000,00	23.100,00	0,00	133.100,00	6.655,00	0,00	6.655,00	13.310,00	46.585,00	66.550,00	
CGL2017-82868-R	211.750,00	175.000,00	36.750,00	105.875,00	105.875,00	10.587,50	105.875,00	116.462,50	31.762,50	63.525,00	0,00	
CGL2017-83045-R	107.690,00	89.000,00	18.690,00	86.152,00	21.538,00	1.076,90	86.152,00	87.228,90	2.153,80	7.538,30	10.769,00	
CGL2017-83170-R	181.500,00	150.000,00	31.500,00	0,00	181.500,00	9.075,00	0,00	9.075,00	18.150,00	63.525,00	90.750,00	
CGL2017-83198-R	141.328,00	116.800,00	24.528,00	0,00	141.328,00	14.132,80	0,00	14.132,80	42.398,40	84.796,80	0,00	
CGL2017-83287-R	155.848,00	128.800,00	27.048,00	0,00	155.848,00	7.792,40	0,00	7.792,40	15.584,80	54.546,80	77.924,00	
CGL2017-83538-C3-1-R	121.000,00	100.000,00	21.000,00	96.800,00	24.200,00	2.420,00	96.800,00	99.220,00	7.260,00	14.520,00	0,00	
CGL2017-83538-C3-2-R	121.000,00	100.000,00	21.000,00	96.800,00	24.200,00	2.420,00	96.800,00	99.220,00	7.260,00	14.520,00	0,00	
CGL2017-83538-C3-3-R	96.800,00	80.000,00	16.800,00	48.400,00	48.400,00	4.840,00	48.400,00	53.240,00	14.520,00	29.040,00	0,00	
CGL2017-83546-C3-1-R	71.390,00	59.000,00	12.390,00	57.112,00	14.278,00	1.427,80	57.112,00	58.539,80	4.283,40	8.566,80	0,00	
CGL2017-83546-C3-2-R	24.926,00	20.600,00	4.326,00	0,00	24.926,00	2.492,60	0,00	2.492,60	7.477,80	14.955,60	0,00	
CGL2017-83546-C3-3-R	77.924,00	64.400,00	13.524,00	0,00	77.924,00	7.792,40	0,00	7.792,40	23.377,20	46.754,40	0,00	
CGL2017-83855-R	96.800,00	80.000,00	16.800,00	0,00	96.800,00	4.840,00	0,00	4.840,00	9.680,00	33.880,00	48.400,00	
CGL2017-83866-C3-1-R	163.350,00	135.000,00	28.350,00	0,00	163.350,00	16.335,00	0,00	16.335,00	49.005,00	98.010,00	0,00	
CGL2017-83866-C3-2-R	72.358,00	59.800,00	12.558,00	0,00	72.358,00	7.235,80	0,00	7.235,80	21.707,40	43.414,80	0,00	
CGL2017-83866-C3-3-R	133.100,00	110.000,00	23.100,00	0,00	133.100,00	13.310,00	0,00	13.310,00	39.930,00	79.860,00	0,00	

(1) Presupuesto total concedido = presupuesto total financiable

(2) Fecha límite para la amortización del anticipo reembolsable: 31 de diciembre de 2025

Equipo de Investigación

- UIB:
  - Romu Romero
  - Víctor Homar
  - Arnau Amengual
- AEMET IB:
  - Mª Àngels Picornell
  - Joan Campins
- AEMET CNP:
  - Carlos Santos
- AEMET CAT:
  - Alfons Callado

Equipo de Trabajo

- UIB:
  - Sergio Alonso
  - Climent Ramis
  - Agustí Jansà
  - Daniel Argüeso
  - Diego Carrió
  - Maria Fca. Cardell
  - Alejandro Hermoso
  - Aina Maimó
  - Maria del Mar Vich
  - Jordi Vallespir
  - + Contrato Postdoc?
- AEMET CNP:
  - J. Antonio García-Moya
- NOA (Grecia):
  - Emmanouil Flaounas
- NSSL (USA):
  - Dustan Wheatley
  - Louis J. Wicker

Objetivo general

…the fundamental objective of COASTEPS is to **improve society's ability to cope with high-impact weather in the Mediterranean coast lands** in the short and long terms through research focused on improving the accuracy, lead time and utilization of numerical weather predictions and regional climate projections of extremes.

The proposal focuses on four main axis:

- EDA and EPS generation, including stochastic physics
- EPS exploitation: sensitivity, covariance and forecast
- Physical processes analysis
- Analysis of climatic threats

Objetivo I

Hi-Res EPS Generation techniques

"COASTEPS will explore the potential of this promising assimilation and prediction strategy, including stochastic physics perturbations, to improve the short-range forecasts of weather phenomena affecting Mediterranean coastlands."

Objective 1. To design and characterize an ensemble data assimilation (EDA) system based on Kalman Filtering and stochastic physics that optimizes the use of routinely available observations over the Western Mediterranean basin, including remote sensing data.

Objetivo II

Cuantificación de la contribución de EDA sobre la predicción de fenómenos costeros

"This framework is specially applicable in regions with a high contrast of observational means between terrestrial and maritime areas. In the Mediterranean, not only the sea acts as a favouring factor for intense cyclogenesis and convective initiation but it is undoubtly undersampled and analysis fields over maritime bodies lack the required precision to produce useful and valuable convective-scale forecasts.

"…this proposed cycling configuration may effectively transport observational information towards less densely observed areas, significantly improving severe weather forecast accuracy."

Objective 2. To characterize and quantify forecast improvements obtained from the EDA system on coastal high-impact phenomena originated over the sea. The characterization includes the attribution of these error reductions to specific features in the atmospheric state and to observation type.

Objetivo III

Comprensión física de los procesos implicados

"…there is the need to improve our understanding of the atmospheric processes at work for convective system scale phenomena and their representation in the numerical models."

"COASTEPS focuses the attention on cyclogenesis and medicane formation, together with a better characterization of coastal heavy precipitation events."

Objective 3. To understand the dynamical and physical processes acting on the genesis and evolution of the seamless range of cyclone types that produce high impact weather in the Mediterranean, with special focus on the factors that drive their evolution as essentially baroclinic or diabatic (i.e. medicane).

Objetivo IV

Desarrollo y verificación de técnicas de cálculo de sensibilidad

"A relevant experimental tool previously used by the research team and with promising output for COASTEPS is the forecast sensitivity calculations and the use of statistical links derived from ensemble data (Garcies and Homar 2009, 2010 and 2011; Wheatley et al. 2010). The identification of links, even of statistical nature, between fields, structures or even parameters can be indicative or confirmative of physically relevant connections that shed light on cause-effect findings and conclusions."

Objective 4. To explore the potential of advanced forecast sensitivity fields based on ensemble covariance matrix and covariant patterns to guide physical process studies and cause-effect attributions.

Objetivo V

Postproceso y explotación de la información probabilista

"COASTEPS is devoted to identify forecast postprocessing products that help permeate probabilistic alerts to EPS users and exploit its entire potential."

Objective 5. To quantify and attribute the fuzzy limits of predictability of coastal high impact weather initiated over maritime areas. This includes the use of tailored post-processing tools that extract the maximum forecasting value for extreme phenomena and also the use of hydrological simulations as an advanced verification tool for precipitation forecasts.

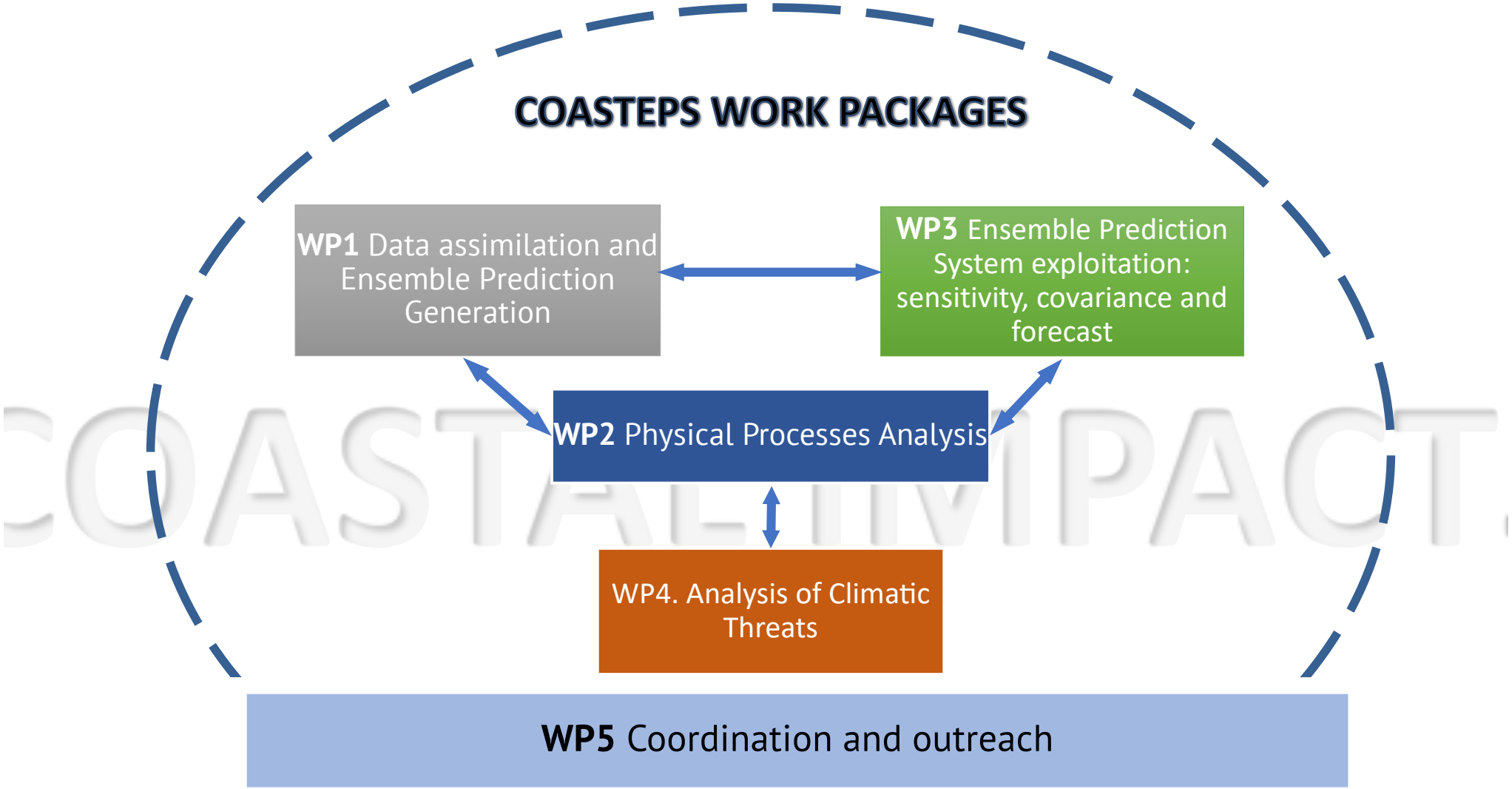
Objetivo VI

Análisis del riesgo debido a extremos en el clima futuro

"A better characterization and physical understanding of the phenomena initiated over maritime areas and affecting coasts put the research team in the position of refining current specific climatologies of extremes and venture to the use of new tools. COASTEPS focuses the attention on cyclogenesis and medicane formation, together with a better characterization of coastal heavy precipitation events."

Objective 6. To progress in the assessment of the future risk for climatic extremes compared to present climate, mainly over coastal Mediterranean lands, and assess the impacts over floods and severe winds.

Organigrama del proyecto



TAREAS

- T1: DATA ACQUISITION AND ALLOCATION OF COMPUTATIONAL AND STORAGE RESOURCES
- T2: DATA ASSIMILATION AND GENERATION OF ENSEMBLE PREDICTIONS
- T3: PHYSICAL ANALYSIS OF HIGH-IMPACT PRODUCING SYSTEMS
- T4: CHARACTERIZATION OF THE FLOW OF ASSIMILATED INFORMATION ACROSS THE COAST
- T5: ENSEMBLE PREDICTION SYSTEM DATA MINING
- T6: CLIMATE PROJECTIONS OF COASTAL EXTREMES
- T7: COORDINATION AND COMMUNICATION

TAREAS

Clave identificación investigadores

Research Team: 1: V. Homar (PI, UIB); **2**: R. Romero (UIB); **3**: A. Amengual (UIB);
4: J. Campins (AEMET-IB); **5**: M. A. Picornell (AEMET-IB)
6: C. Santos (AEMET-MAD);
7: A. Callado (AEMET-BCN)
Working Team: 8: S. Alonso (UIB); **9:** C. Ramis (UIB); **10:** A. Jansà (UIB); **11**: D. Argüeso (UIB); **12:** D. Carrió (FPI-CAIB, UIB); **13:** M. Cardell (FPI-CAIB, UIB); **14:** A. Hermoso (UIB)
15: J. A. García-Moya (AEMET-MAD).
16: Louis J. Wicker (NSSL, USA); **17:** Dustan M. Wheatley (NSSL, USA)
18: Emmanouil Flaounas (NOA, Greece)
Proposed COASTEPS hired taskforce:
19: Post-doc researcher (contract, UIB); **20**: Graduate researcher (contract, UIB); **21**: Contracted ITS technician (contract, UIB);
Note: The tasks in which the solicited FPI fellow would develop his or her research are also indicated (**22)** in the chronogram.

TAREAS

Tasks (Persons involved and responsible researcher)	Year 1 Quarter	Year 2 Quarter	Year 3 Quarter
	1|2|3|4	1|2|3|4	1|2|3|4
T1 DATA ACQUISITION AND ALLOCATION OF COMPUTATIONAL AND STORAGE RESOURCES	**ALL WPs**		
T1.1 Selection, collection and description of episodes of interest (**1**,2,3,4,5,6,7,8,9,10)	X|X| |	| | |	| | |
T1.2 Acquisition and processing of conventional observations (3,**6**,12,19)	X|X|X|	| | |	| | |
T1.3 Acquisition and processing of remote sensing observations (4,6,7,**19**)	X|X| |	| | |	| | |
T1.4 Acquisition and processing of gridded fields (2,5,**19**)	X|X| |	| | |	| | |
T1.5 Acquisition of geographical information of relevant basins and stream flow observations from selected cases of special hydrometeorological interest (**3**,20)	X|X|X|	| | |	| | |
T1.6 Acquisition and processing of climate analysis and model fields (**2**,11,20)	X|X|X|	| | |	| | |
T1.7 Installation and maintenance of computational resources (**21**)	X|X|X|X	X|X|X|X	X|X|X|X

Entregables

- **T1.1:** A list of 15 to 20 COASTEPS case studies with documenting information on the project web page
- **T1.2:** Database of conventional observations in regions affected by the COASTEPS case studies
- **T1.3:** Dataset of regional radar data and satellite retrieved wind, humidity and temperature tropospheric estimates
- **T1.4:** Dataset of analysis and forecast fields for the collection of COASTEPS case studies
- **T1.5:** Dataset of topography, lithology, soil moisture content and streamflow for the COASTEPS hydrologically relevant cases.
- **T1.6:** Dataset of present climate reanalysis (ERA-I; ERA5) and CMIP5, MED- CORDEX projections
- **T1.7:** Functional and optimized computational resources at UIB premises

TAREAS

Tasks (Persons involved and responsible researcher)	Year 1 Quarter	Year 2 Quarter	Year 3 Quarter
	1|2|3|4	1|2|3|4	1|2|3|4
T2 DATA ASSIMILATION AND GENERATION OF ENSEMBLE PREDICTIONS	**WP1**		
T2.1 Generation of downscaled high resolution predictions (1,14,19,**20**)	|X|X|X	| | |	| | |
T2.2 Design the numerical configuration and assimilation strategy (**1**,2,4,5,6,12,15,16,17,19)	|X|X|X	| | |	| | |
T2.3 Generation of predictions assimilating conventional data (1,12,**19**)	| |X|X	X| | |	| | |
T2.4 Generation of predictions assimilating AMDAR humidity profiles (**4**,10)	| |X|X	X| | |	| | |
T2.5 Generation of predictions assimilating radar data (1,12,16,17,**19**,22)	| | |X	X|X| |	| | |
T2.6 Generation of predictions assimilating satellite data (**1**,4,12,16,17,19,20,22)	| | |	X|X| |	| | |
T2.7 Generation of EDA-EPS using stochastic physics parameterizations (**1**,8,15,19,20,22)	| | |X	X|X|X|	| | |
T2.8 Physical analysis of the coherence and numerical sustainability of warm-start phenomena in forecast initial conditions (**2**,4,22)	| | |	X|X|X|X	| | |

Entregables

- **T2.1:** Downscaled ensemble analysis and weather predictions for the COASTEPS case studies up to 72h
- **T2.2:** A reference DART configuration and assimilation strategy for an optimum regional ensemble analysis production to be used in Tasks 2.3 to 2.7
- **T2.3:** For each COASTEPS case, an ensemble analysis and up to 72 h prediction, ingesting conventional data
- **T2.4:** Report and paper describing the impact of this novel observation source on Mediterranean extreme events short-range prediction
- **T2.5:** For each COASTEPS case, an ensemble analysis and up to 72 h prediction, ingesting radar data
- **T2.6:** For each COASTEPS case, an ensemble analysis and up to 72 h prediction, ingesting satellite fields
- **T2.7:** A collection of specified parameters for the chosen stochastic method, and an ensemble analysis and forecast for COASTEPS selected cases
- **T2.8:** Report on the diagnosis and proposed solutions for the short impact time of remote sensing analysis increments

TAREAS

Tasks (Persons involved and responsible researcher)	Year 1 Quarter	Year 2 Quarter	Year 3 Quarter
	1|2|3|4	1|2|3|4	1|2|3|4
T3 PHYSICAL ANALYSIS OF HIGH-IMPACT PRODUCING SYSTEMS	**WP2**		
T3.1 Application of the Factor separation technique to medicane prone situations. Quest for environmental medicane triggering factors (**2**,5,9,10,20)	X|X|X|X	| | |	| | |
T3.2 Application of Ensemble based sensitivity analysis to medicane prone situations. Quest for environmental medicane triggering factors (**1**,14)	|X|X|X	X| | |	| | |
T3.3 Adaptation of cyclone phase-space diagrams to objectively identify medicanes (2,**5**,10,18)	X|X|X|X	| | |	| | |
T3.4 Towards a process-based definition of medicanes (1,2,5,9,10,12,18)	| | |	X|X| |	| | |
T3.5 Explore the use of diabatic and conservative PV tracers for the diagnostic of Mediterranean cyclogenesis (1,2,**3**,9,18,22)	| | |	X|X|X|X	X| | |
T3.6 Use of WRF local water balance diagnostic module to backtrack moisture sources in heavy precipitation coastal events (1,3,8,11,18,**20**)	| | |	|X|X|X	X|X| |

Entregables

- **T3.1:** Relative effect of pure baroclinic factors, pure CISK factors and their synergism on the genesis of all COASTEPS medicane cases
- **T3.2:** A report describing categorization of ensemble members, and the sensitivity calculation results
- **T3.3:** Standard Med-Hart diagram proposal and additional relevant phase space to characterize medicane formation
- **T3.4:** A precise medicane definition proposal for the international community
- **T3.5:** Report on the diagnostic and attribution of cyclogenetic processes in Mediterranean cyclones. Proposal of a processes-based classification of Mediterranean cyclones
- **T3.6:** Functional water balance WRF-ARW module and a report on water vapor sources for Mediterranean heavy precipitation events

TAREAS

Tasks (Persons involved and responsible researcher)	Year 1 Quarter	Year 2 Quarter	Year 3 Quarter
	1|2|3|4	1|2|3|4	1|2|3|4
T4 CHARACTERIZATION OF THE FLOW OF ASSIMILATED INFORMATION ACROSS THE COAST	**WP3**		
T4.1 Synthesis and quantification of analysis error reduction over maritime areas (**3**,4,6,7,14,19)	| | |	X|X|X|	| | |
T4.2 Information tracking: spatio-temporal attribution of analysis error reductions over maritime areas (1,**6**,11,12,19)	| | |	|X|X|X	X| | |
T4.3 Information tracking: observational attribution of analysis error reductions over maritime areas (1,12,19,**20**)	| | |	| |X|X	X|X|X|
T4.4 Atribution of analysis error reductions over maritime areas: standard ensemble sensitivity calculation (**1**,7,14)	| | |	| |X|X	X|X| |
T4.5 Atribution of analysis error reductions over maritime areas: pattern based ensemble sensitivity calculation (**1**,14)	| | |	| | |X	X|X|X|

Entregables

- **T4.1:** Verification scores of the ensemble analysis produced in Task 2
- **T4.2:** Evidences of spatiotemporal information transference in the analysis and forecasting system for various types of COASTEPS case studies
- **T4.3:** Attribution of analysis improvements over maritime areas to observation types for various COASTEPS case studies
- **T4.4:** Sensitivity fields of analysis improvements for COASTEPS case studies, with special emphasis on the maritime improvements connected to precursor inland observations
- **T4.5:** A new method to compute ensemble sensitivities and the resulting sensitivity information

TAREAS

Tasks (Persons involved and responsible researcher)	Year 1 Quarter	Year 2 Quarter	Year 3 Quarter
	1|2|3|4	1|2|3|4	1|2|3|4
T5 ENSEMBLE PREDICTION SYSTEM DATA MINING	**WP3**		
T5.1 Analysis of simultaneous and asynchronous EPS covariance relationships as indicators of cause-effect physical links (1,4,12,14,15,17,**19**)	| | |	X|X|X|X	X| | |
T5.2 Intercomparison of ensemble configurations generated in Task 2. Identification of optimal EDA strategy (**1**,4,6,7,15,16,17,19)	| | |	X|X|X|X	| | |
T5.3 Quantification of the predictability of convection initiation and intense cyclogenesis over coastal maritime areas (1,3,**6**,7,10,12,15,20)	| | |	|X|X|X	X|X| |
T5.4 Calculation and verification of point-based and pattern-based ensemble forecast sensitivities of high impact coastal phenomena (**1**,14)	| | |	| |X|X	X|X | |
T5.5 Design of specific forecast products to convey probabilistic forecasts of coastal extremes (1,2,6,**7**,10,15,20)	| | |	X|X|X|X	X|X|X|X
T5.6 Impact-oriented forecast verification: high-resolution hydrological response to heavy precipitation coastal events (2,**3**,11)	| | |	X|X|X|X	X|X|X|X

Entregables

- **T5.1:** Report on the covariance relationships and hypothesized physical links attributing severity of inland impacts to maritime dynamical and thermodynamical features
- **T5.2:** Report comparing verification scores and the identification of the most successful EDA strategy to improve analysis precision over maritime areas
- **T5.3:** Quantitative assessment of the predictability of time, location and intensity of initial developments for the set of COASTEPS case studies
- **T5.4:** A comparative analysis of both ensemble calculation techniques and a collection of sensitivity fields for the high-impact phenomena occurred during the COASTEPS cases
- **T5.5:** New forecast products that highlight the chances of extreme phenomena from the bulk of more frequent scenarios that mask standard ensemble based products
- **T5.6:** Report on the hydrological response to EDA improvements tested in Task 2, with special emphasis on peak timing, runoff volume and rising limbs in the streamflow

TAREAS

Tasks (Persons involved and responsible researcher)	Year 1 Quarter	Year 2 Quarter	Year 3 Quarter
	1|2|3|4	1|2|3|4	1|2|3|4
T6 CLIMATE PROJECTIONS OF COASTAL EXTREMES	**WP4**		
T6.1 Characterization of medicane frequency and intensity (**2**,5,8,10,13)	| | |	X|X|X|X	X| | |
T6.2 Characterization of medicane frequency and intensity based on fast intensity simulator model (**2**,11,20)	| |X|X	X|X|X|X	| | |
T6.3 Analysis of Climate change impacts on precipitation over Mediterranean coastal lands: use of IFD curves (1,2,**5**,11)	| |X|X	X| | |	| | |
T6.4 Analysis of temperature effects on precipitation scaling over coastal areas in projected climate. Implications of Clausus-Clapeyron equation (1,2,**3**,5,11,13)	| | |	X|X|X|X	| | |
T6.5 Analysis of the impacts of temperature and precipitation regional climate changes over highly urbanized and tourism-based areas (**2**,11,13)	| | |	| |X|X	X|X| |

Entregables

- **T6.1:** Climatologies of projected frequency and intensity of medicanes across the Mediterranean

- **T6.2:** Improved climatology of projected medicane frequency and intensity across the Mediterranean

- **T6.3:** Report on the impacts of climate change on precipitation by means of IFD curves, with special emphasis over coastal areas

- **T6.4:** Report on the deviations of projected precipitation scenarios throughtout the XXI century with respect to the CC relation projected changes

- **T6.5:** Report on the local impacts of climate change throught the XXI century over coastal Mediterranean lands, with special focus on the impacts on the tourism potential

TAREAS

Tasks (Persons involved and responsible researcher)	Year 1 Quarter	Year 2 Quarter	Year 3 Quarter
	1|2|3|4	1|2|3|4	1|2|3|4
T7 COORDINATION AND COMMUNICATION	**WP5**		
T7.1 Organization of annual all-hands project meetings (**1**, ALL)	X| | |	X| | |	X| | |
T7.2 Organization of Work Package teleconference meetings (**1**,2,3,4,5,6,7,11)	|X| |X	|X| |X	X| |X|
T7.3 Transference of scientific results (**ALL**)	|X|X|X	X|X|X|X	X|X|X|X
T7.4 Maintainance of social networks and project web portal (1,**21**)	X|X|X|X	X|X|X|X	X|X|X|X
T7.5 Preparation of technical and outreach notes for international informal publications (**1**)	|X| |X	|X| |X	|X| |X

Entregables

- **T7.1:** All-hands meetings, and also the meeting notes and the presented materials posted on the project web page
- **T7.2:** Work Package meetings
- **T7.3:** Conference communications, High impact JCR papers and data portal
- **T7.4:** Project web page and active social media feeds
- **T7.5:** COASTEPS impact in international scientific informal and outreach publications

IMPACTOS ESPERADOS

The accomplishment of COASTEPS objectives implies scientific and technical contributions of great relevance, not only for the **advance of the scientific knowledge** but also for a better **societal preparedness against natural hazards**. An underlying concept shared throughout the proposal is the predictability of high impact weather affecting the Mediterranean coastlands.

I1: "…render a clear picture of the **current predictability limits of Mediterranean extreme events affecting the coast**. In addition, the **identification of the most skillfull EDA and EPS** strategy has a clear applicability to operational offices across the Mediterranean and specifically to AEMET"

I2: "A better understanding of the information flow in EDA systems across coast lines will allow **policy makers and stakeholder to make informed decisions regarding observational strategies** at the national and international level"

I3: "A better understanding of medicane formation, with refined discriminant criteria will allow not only to **improve medicane forecast** but also to **better characterize its projected evolution** in the future climate"

I4: "The characterization of extreme wind and precipitation events from different perspectives has clear impacts not only on **civil protection preparedness** but also for **water management plans, insurance bussiness outlining** and **engineering design calculations**"

Cuentas

RESUMEN (k€)	SOLICITADO	CONCEDIDO
Total	430	175 (41 %)
Personal	260 (60 %)	106
Ejecución	170 (40 %)	69

EJECUCIÓN (k€)	SOLICITADO	CONCEDIDO
Servidores de cálculo	55	22.7
Almacenamiento	44	18
Fungible	2	.8
Reuniones Proyecto	4.5	1.8
Estancias cortas	14	5.8
Viajes/Congresos/Cursos	37.5	15
Publicaciones	11	4.5
Imprevistos	2.5	1

Expectativas reunión

- Promoción de la colaboración entre investigadores (*bonding*)
- Inicio identificación casos “costeros” de interés
- Previsión general de gastos a imputar
- Compromiso de uso de referencia a proyecto en la difusión de resultados
- Aportaciones a la web del proyecto

Kick-off!

COASTEPS meeting 2018A

GOBIERNO DE ESPAÑA
MINISTERIO DE AGRICULTURA, ALIMENTACIÓN Y MEDIO AMBIENTE
AEMet Agencia Estatal de Meteorología

UIB Universitat de les Illes Balears

MINISTERIO DE ECONOMÍA, INDUSTRIA Y COMPETITIVIDAD
AGENCIA ESTATAL DE INVESTIGACIÓN

EUROPEAN UNION
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