Program: **IDEI**
Project type: **Exploratory research projects**
Project Code: **ID_262**

EXECUTION PLAN

MATHEMATICAL MODELING OF RAINFALLS IN DOBROUDGEA

Year	Stage	Objectives	Activities	Target results	Realisation degree *
2007	Unique	1. Building the data series	1.1. Documentation	1 BDI article. 1 article presented at 9th International Precipitation Conference, Paris	integral
			1.2. Defining the characteristic variables.		integral
			1.3. Data grouping.		integral
		2. Data series analysis	2.1. Representation of series		integral
			2.2. Calibration.		integral
		3. Statistical description of data series	3.1. Characteristic values' calculation		integral
			3.2. Testing the random character, independence, homogeneity/ break.		integral
			3.3. Dissemination		integral
2008	Unique	1. Building multi – component models	1.1. Documentation	1 ISI article, 2 BDI articles.	integral
			1.2. determination of series components		integral
		2. Models' validation	2.1. Series' decomposition by additive and multiplicative models.		integral
			2.2. The study of random variable		integral
		3. Prediction of precipitation evolution	3.1. Prediction by Holt and Winter methods.		integral
			3.2. Parameters' optimization		integral
		4. Frequential analysis	2.1. Documentation		integral
			2.2. IDF curves		integral
		5. Research conducting with optimal results	3.1. Monitoring the progress.		integral
			3.2. Registration and monitoring the expenses.		integral
			3.3. Elaborating the research rapport.		integral

Year	Stage	Objectives	Activities	Target results	Realisation degree *
2009	Unique	1. Determining the long range property of the series	1.1. Documentation	2 ISI articles, 1 BDI article.	integral
			1.2. Adapting some methods to determine the LRD property.		integral
			1.3. Realizing some programs to detect LRD.		integral
		2. Elaboration of ARIMA(p, d, q) models	2.1. Documentation		integral
			2.2. Determining the best model		integral
		3. Models' validation and the prediction of precipitation evolution	3.1. The study of random variable		integral
		4. Elaboration of FARIMA models for the series with LRD property	4.1.Calculus of coefficients		integral
			4.2. Simulation		integral
			4.3. Dissemination		integral
		5. Research conducting with optimal results	5.1. Monitoring the progress and registration the expenses.		integral
			5.2. Elaborating the research rapport.		integral
2010	Unique	1. Characterization of precipitation series by fractionary dimensions.	1.1. Documentation	1 ISI article, 2 BDI articles.	integral
			1.2. Developing a program to calculate the fractionary dimensions of the series.		integral
			1.3. Analysis of fractionary dimensions of precipitations series.		integral
			1.4. Dissemination		
		2. Multifractal characterization of nonstationary series	2.1. Documentation		integral
			2.2. Calculation of Hurst coefficient		integral
			2.3. Determination of probability laws that govern the extreme phenomena.		integral
			2.4. Dissemination		
		3. Research conducting with optimal results	3.1. Monitoring the progress and registration the expenses.		integral
			3.2. Elaborating the research rapport.		integral

* situation at 20.11.2010