

La belleza de descubrir:  
un viaje desde Mileto hasta el  
mundo post-Fukushima

Gonzalo Jiménez



# El primer principio (ἀρχή) (s. VI-IV AC)



Agua (Tales)



Lo indefinido (Anaximandro)



Aire (Anaxímenes)



Fuego (Heráclito)

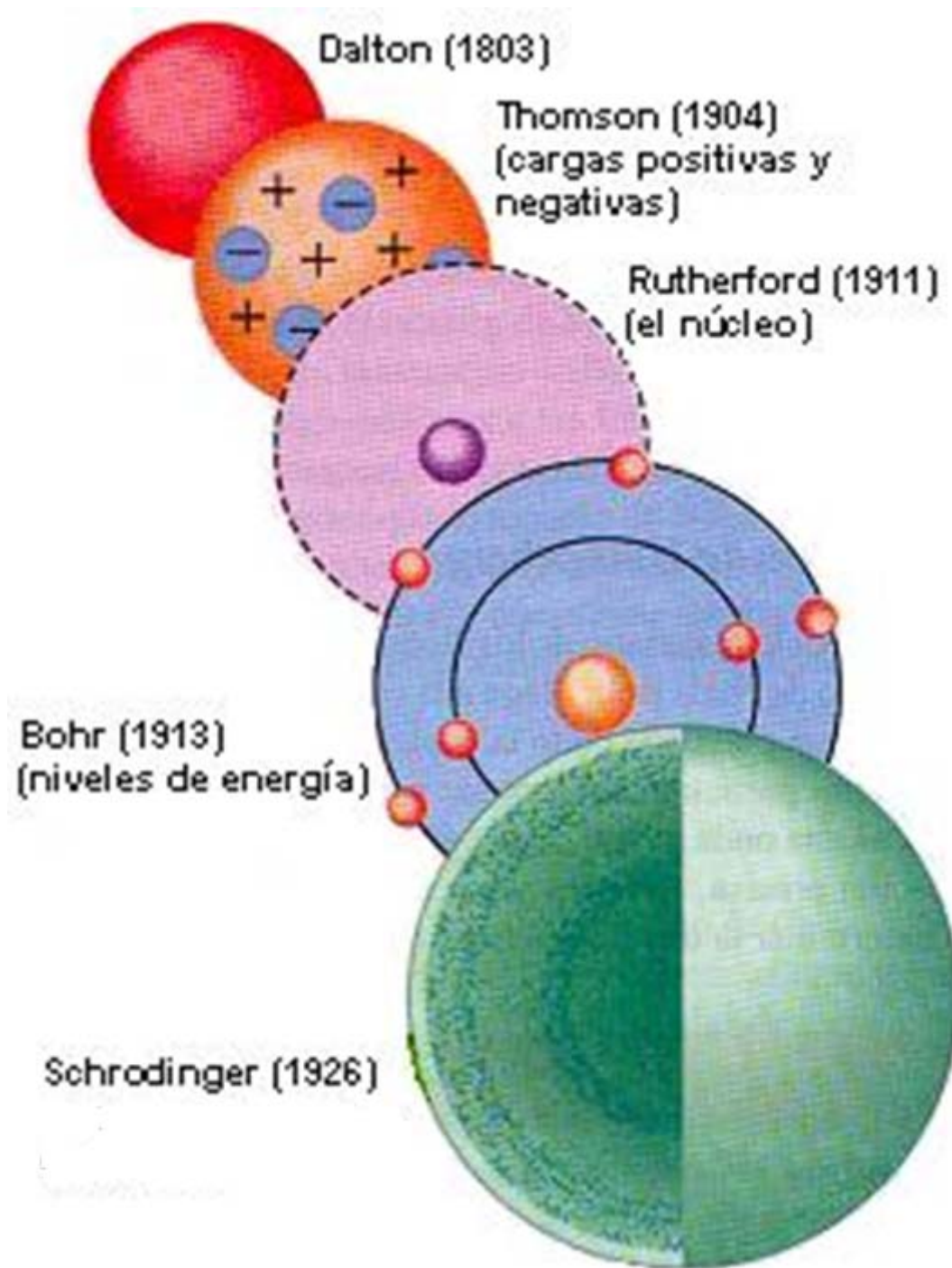


Tierra (Jenófanes)

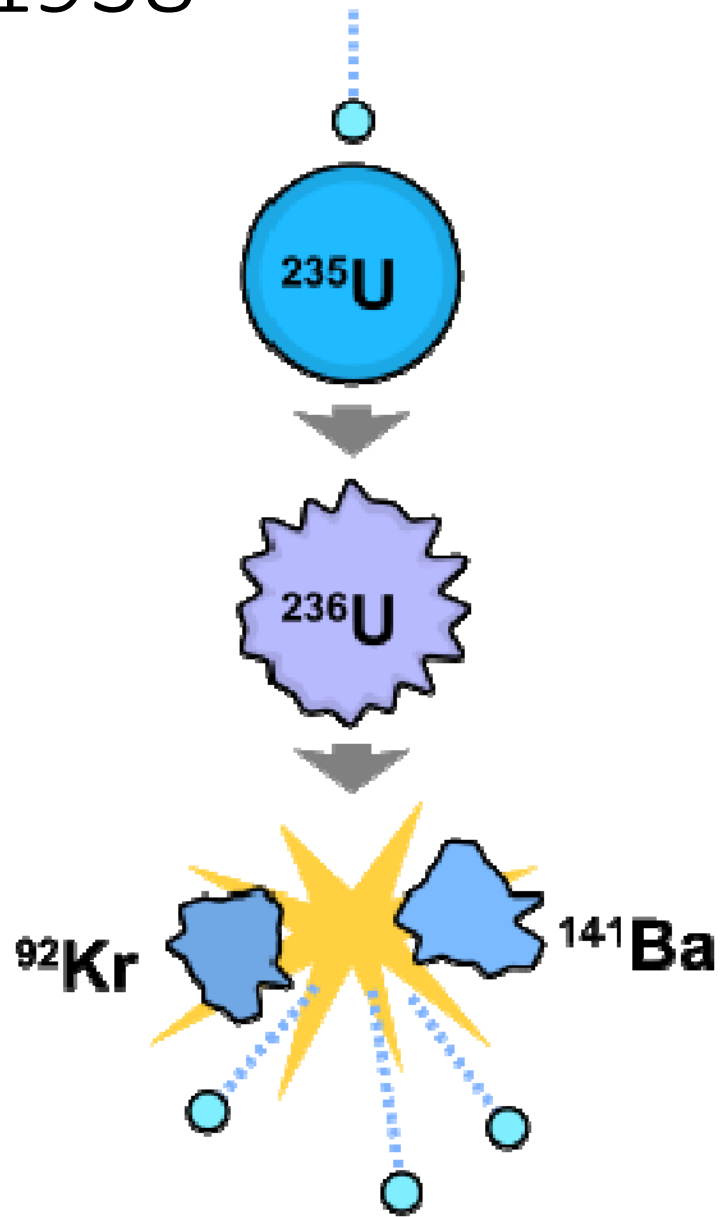


Los 4 elementos (Empédocles)

1803-1926



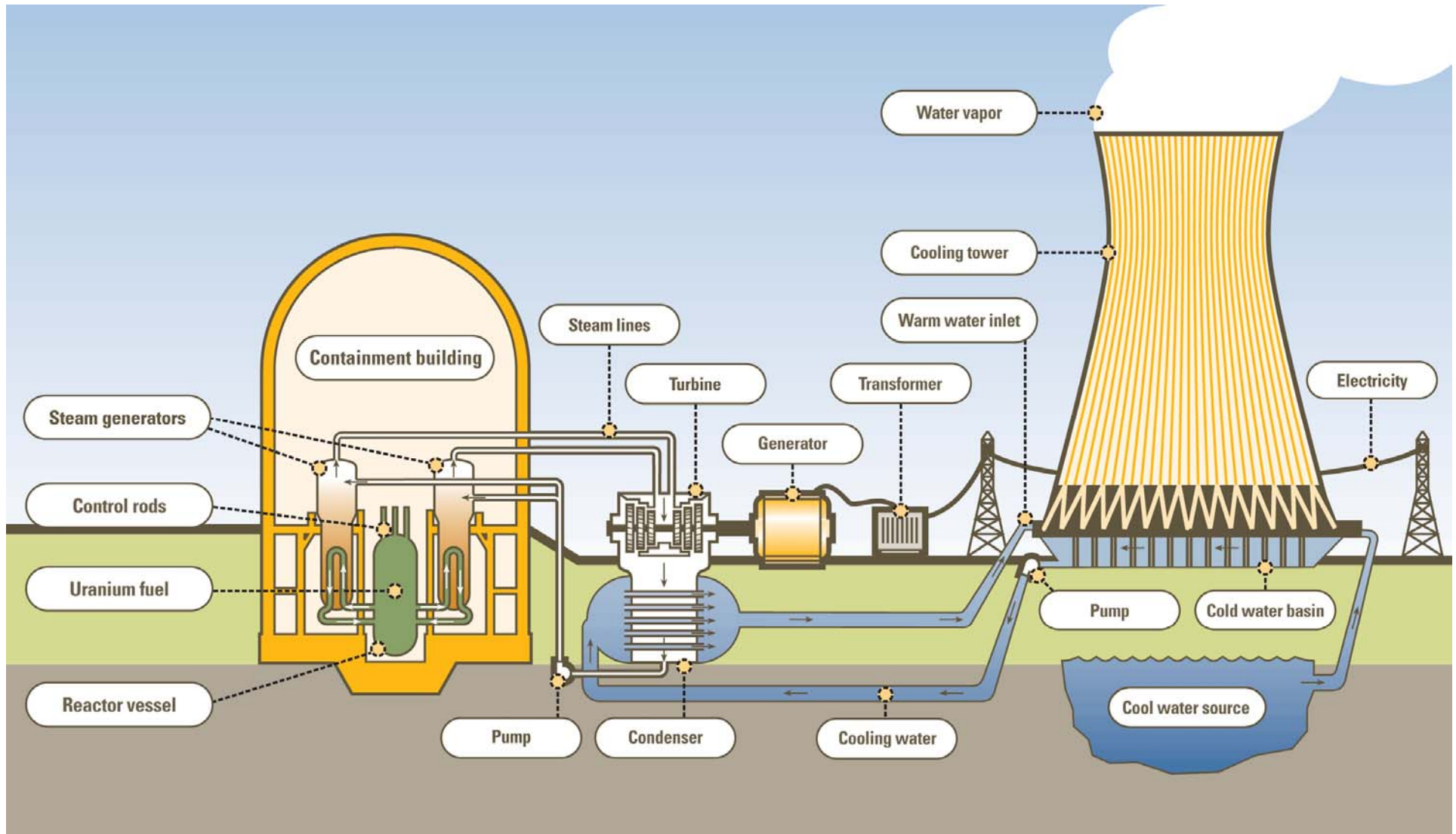
1938



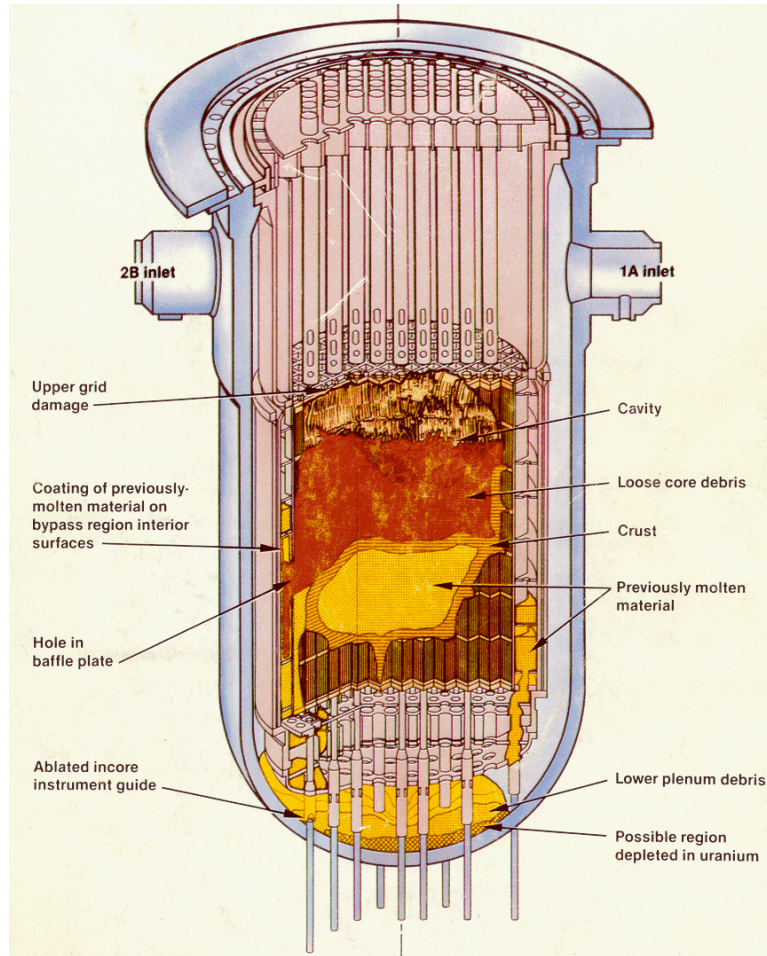
1942



t > 1957

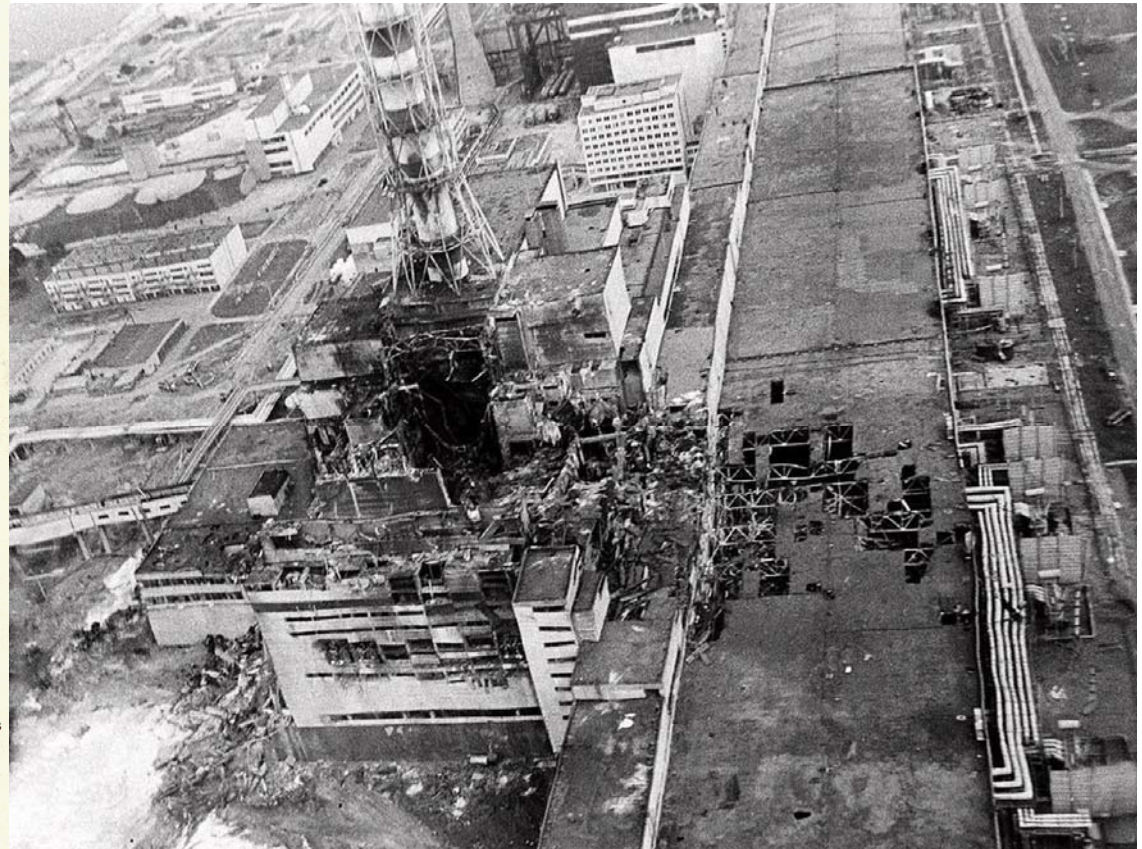


1979



Three Mile Island

1986



Chernobyl

11/03/2011

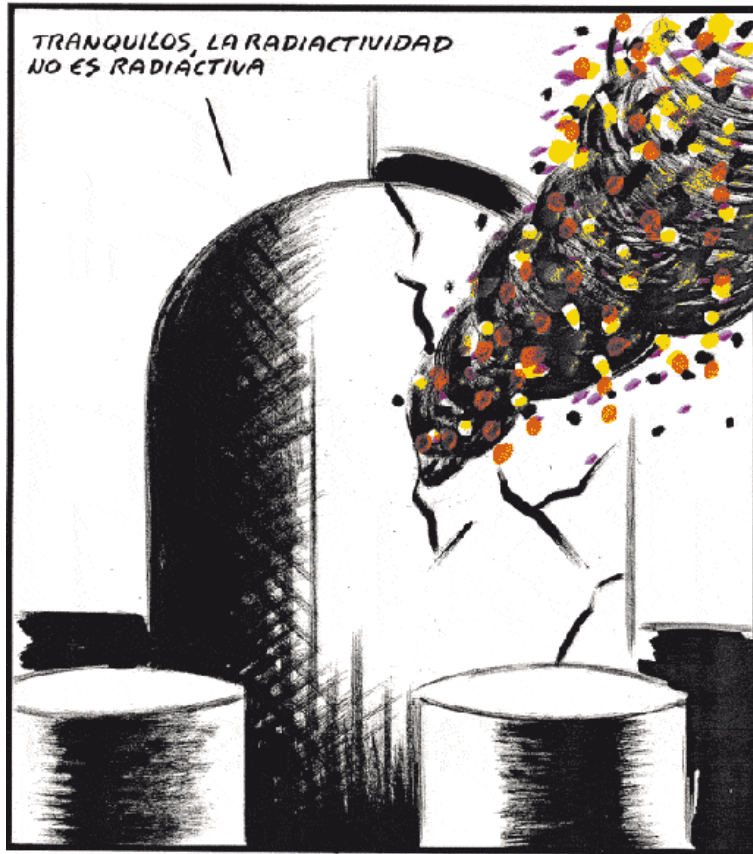


14/03/2011





2011-2012



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Bennett Chattanooga Times Free Press

© Clay Bennett.

13/12/2012



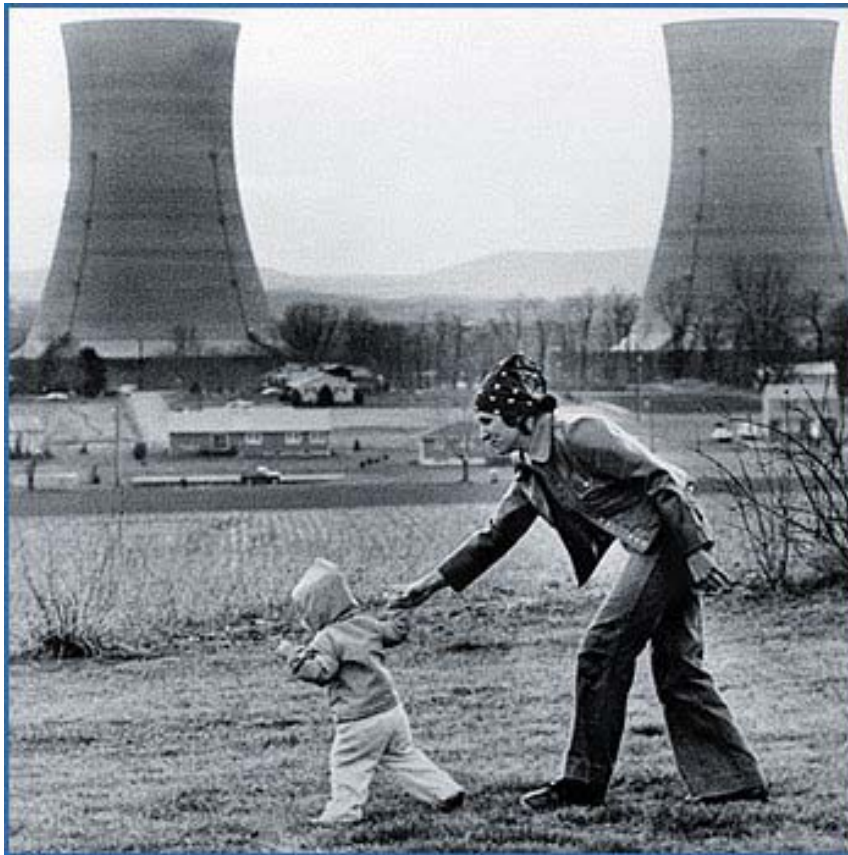
# GRUPO DE INVESTIGACIÓN Ciencia y Tecnología de sistemas avanzados de fisión nuclear



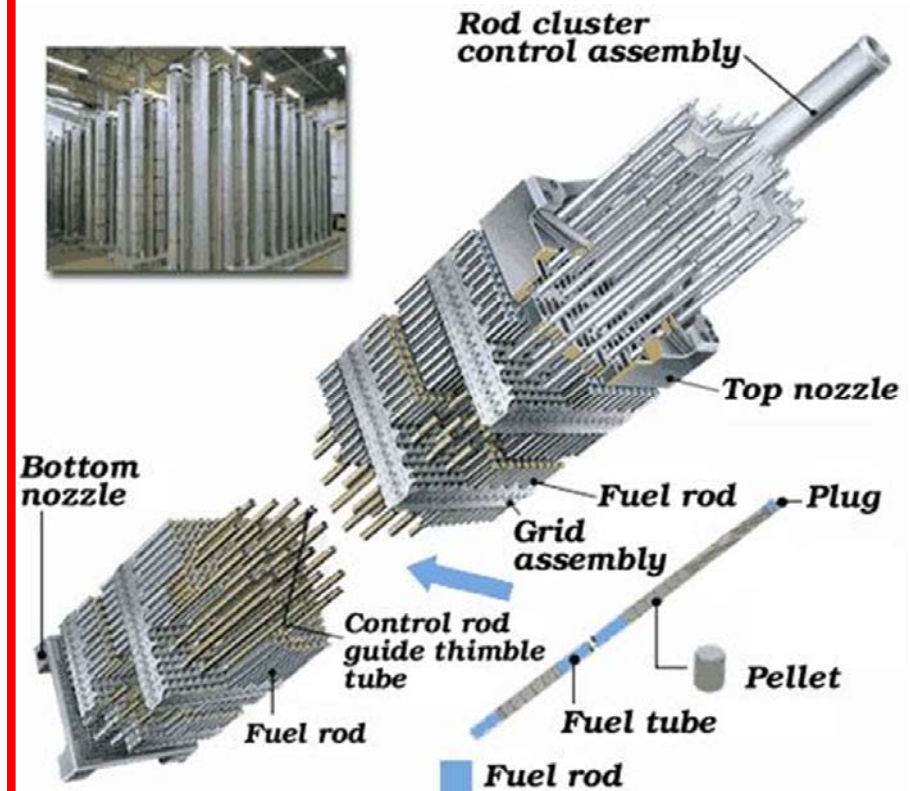


# Líneas de investigación post-Fukushima

## Seguridad nuclear



## Combustible nuclear

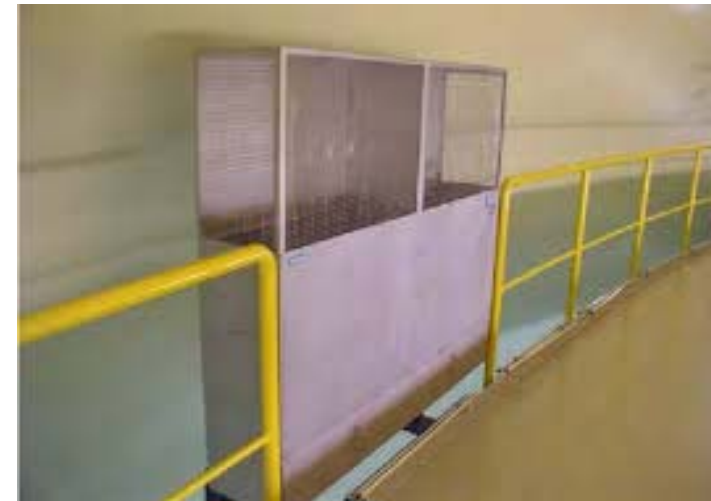
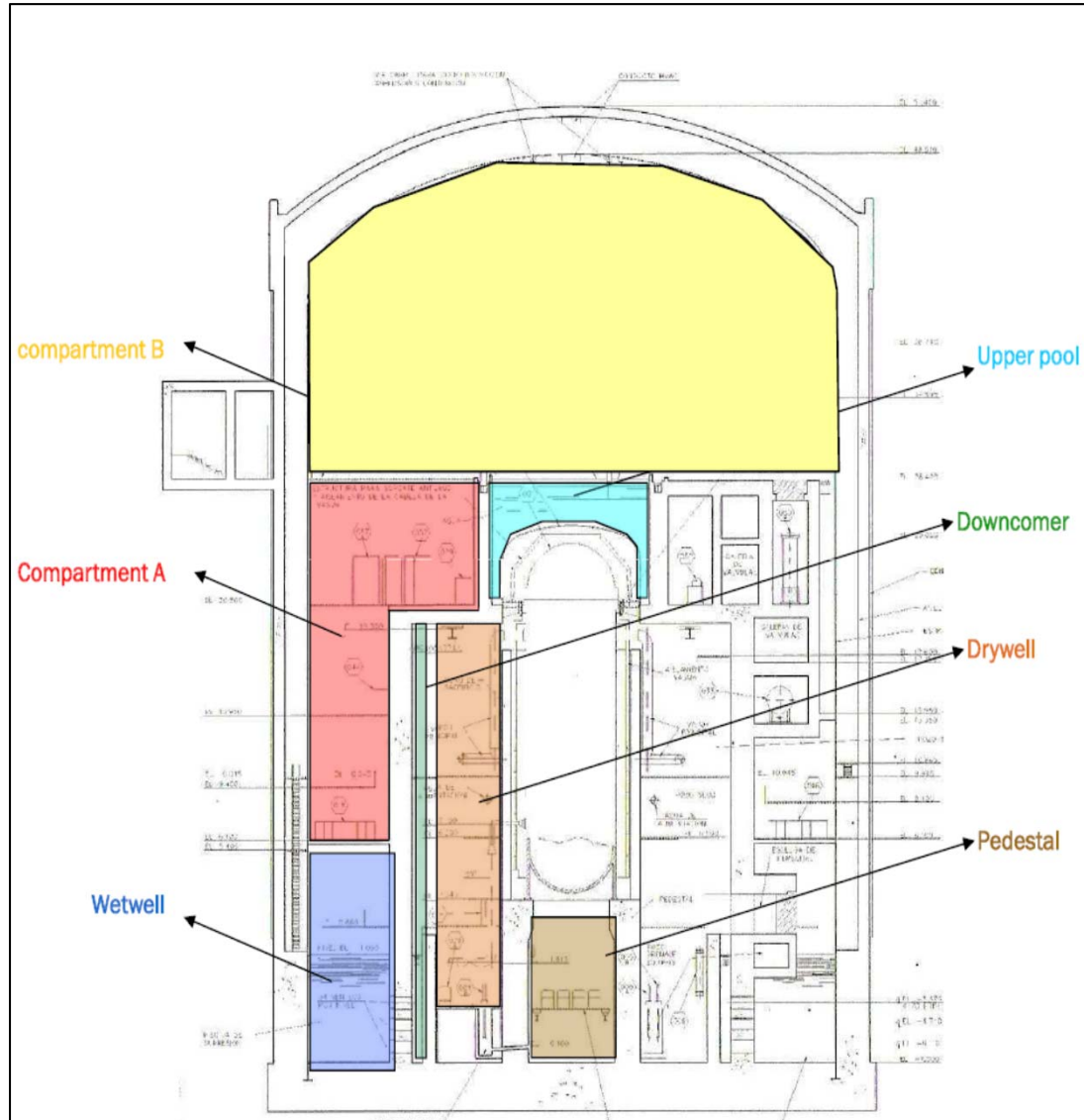


2013-2014

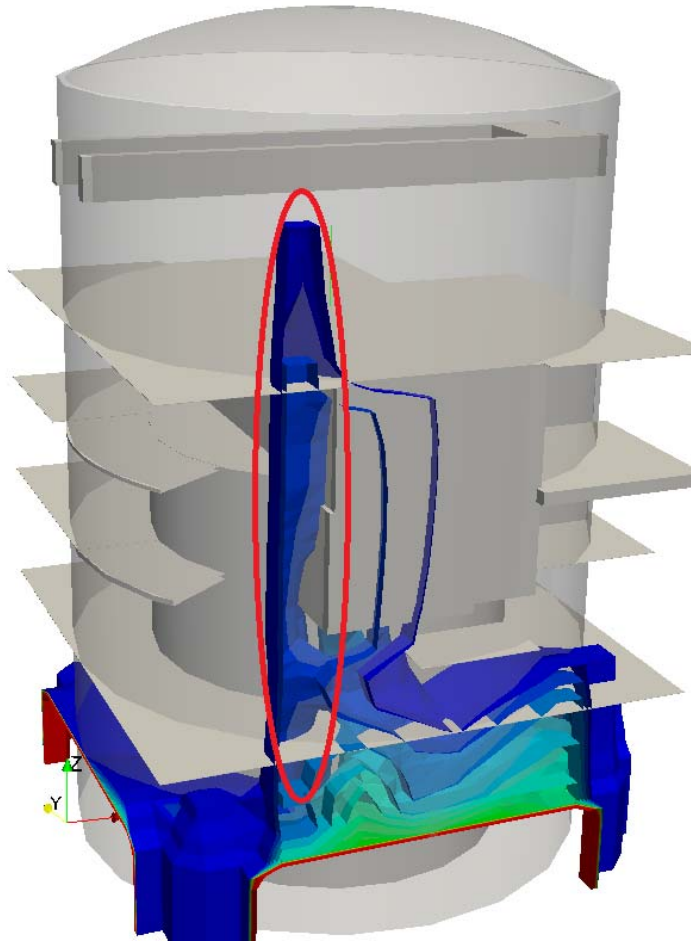
CN Cofrentes



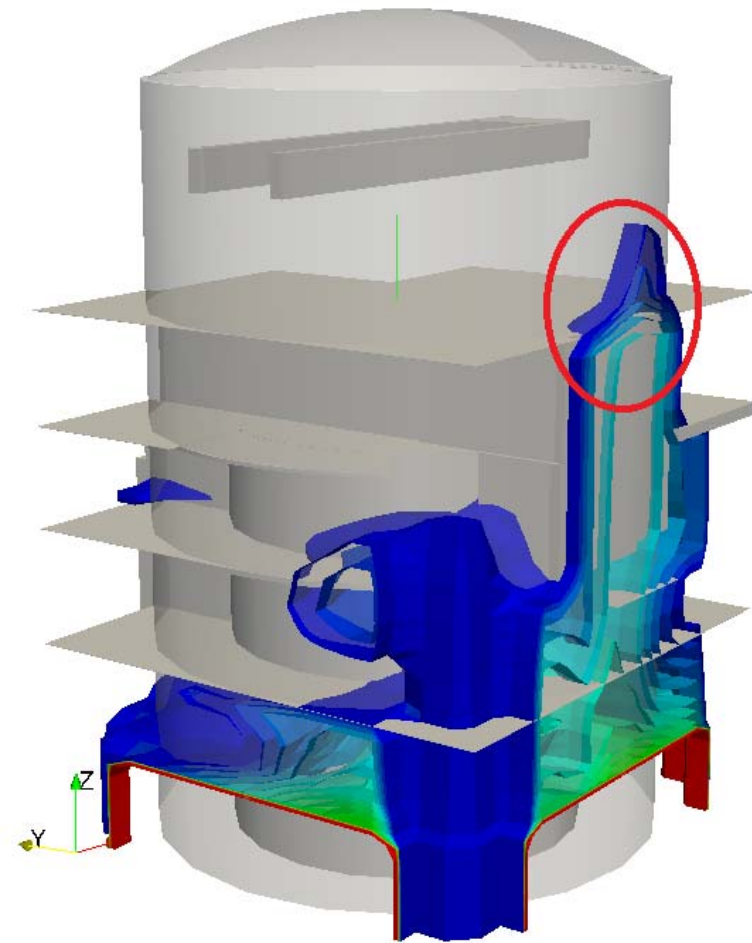
# CN Cofrentes localización y dimensionamiento PARs



# CN Cofrentes localización y dimensionamiento PARs



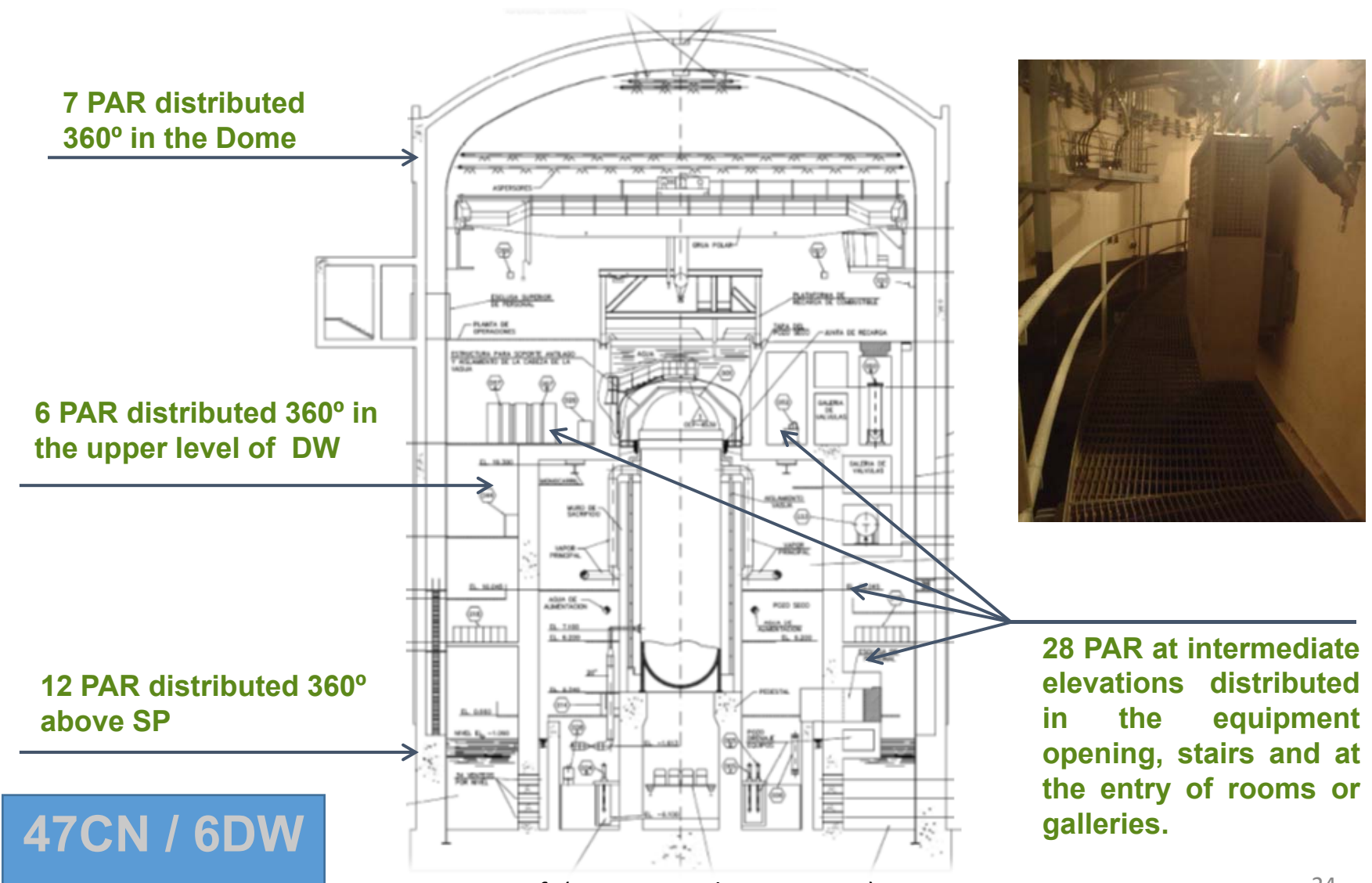
Stream flowing up through the equipment opening (t=2390 s)



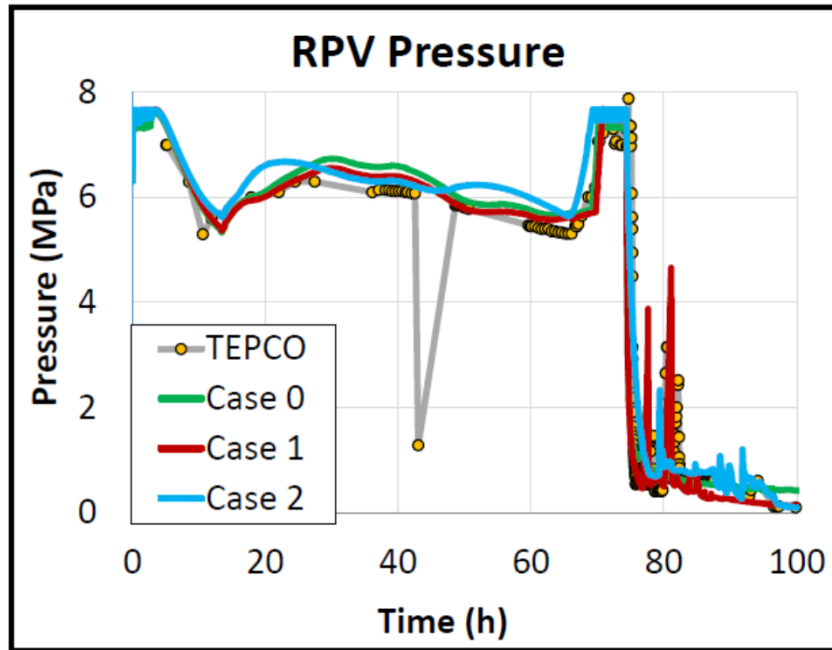
H2 diffusion towards the Dome (t=2280 s)



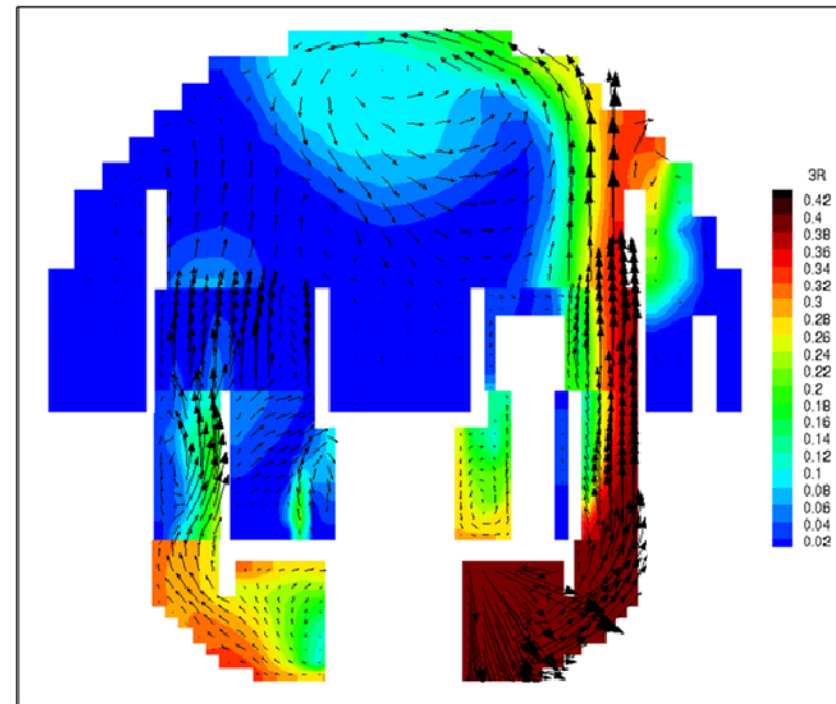
# CN Cofrentes localización y dimensionamiento PARs



# Fukushima Daiichi Unit 2 Accident Analysis with MELCOR 2.1



# Hydrogen Distribution and Passive Autocatalytic Recombiner (PAR) Mitigation in a Konvoi NPP Containment Type



2013-2018

# Modelos contención 3D

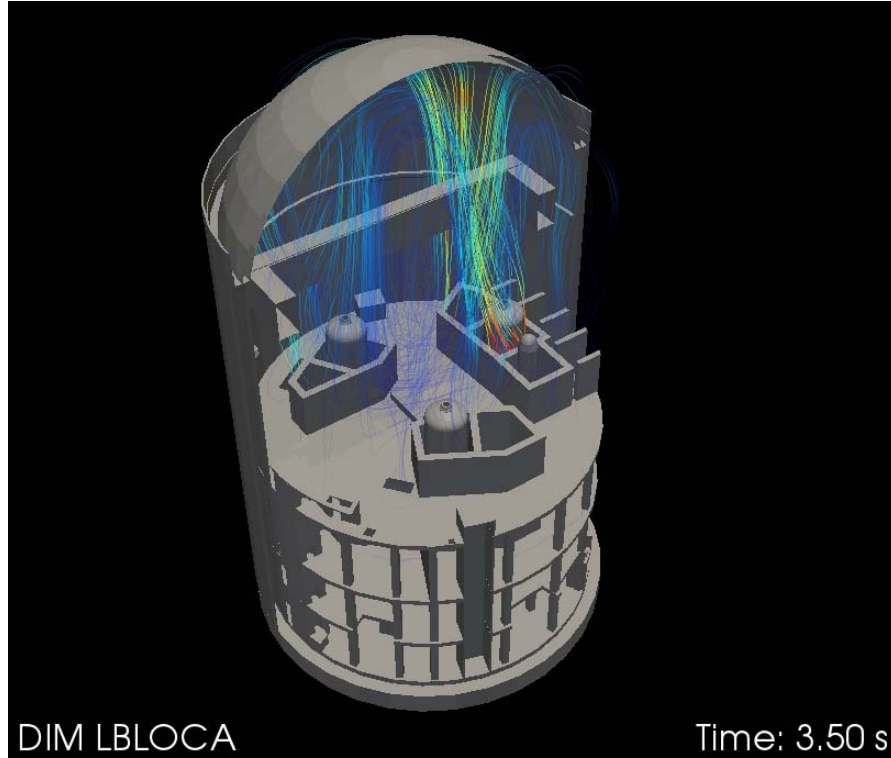


CN Almaraz

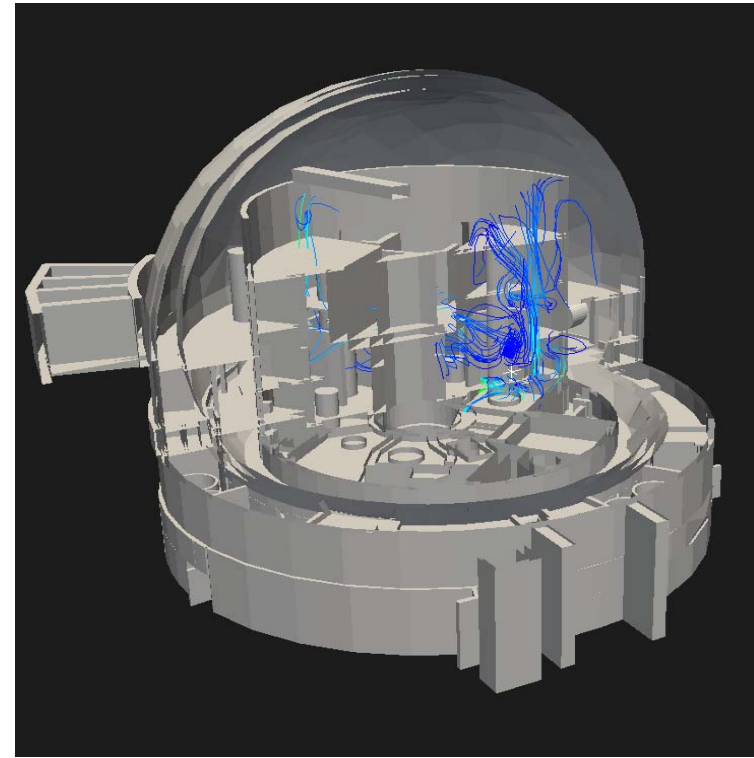


CN Trillo

# Modelos contención 3D



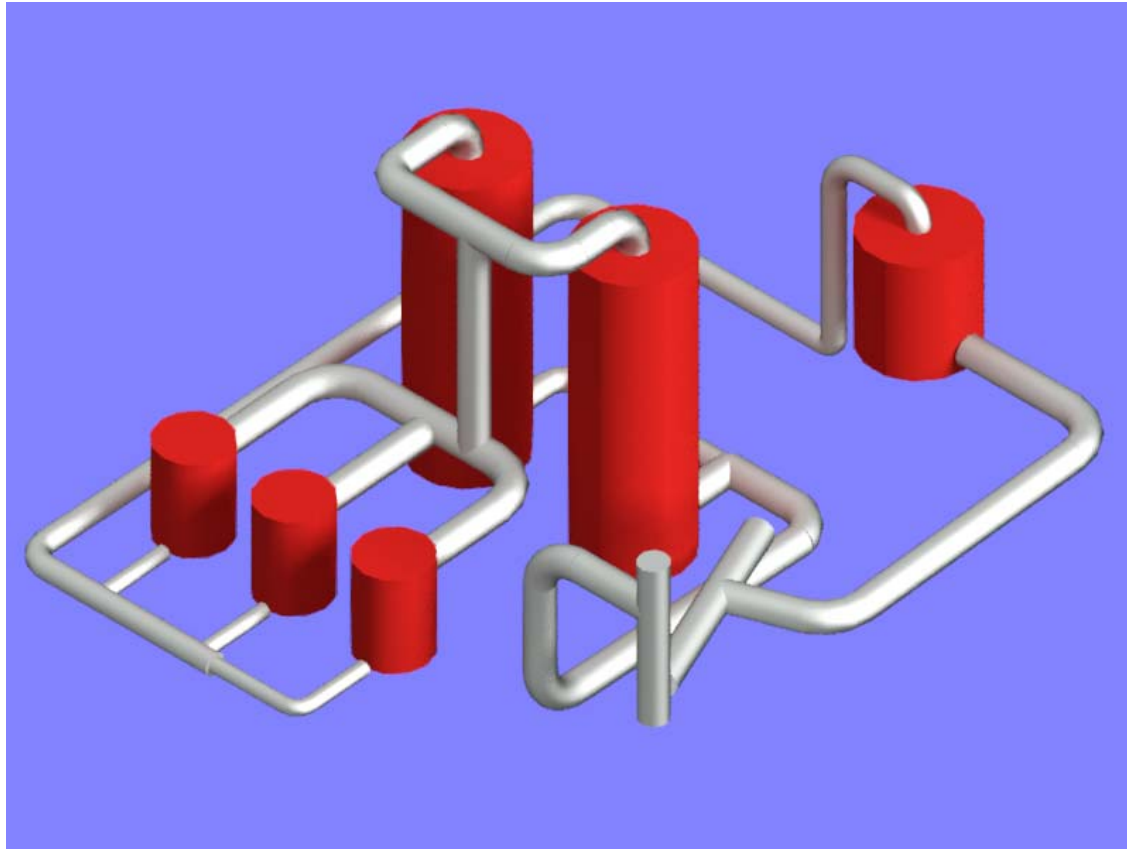
CN Almaraz



CN Trillo

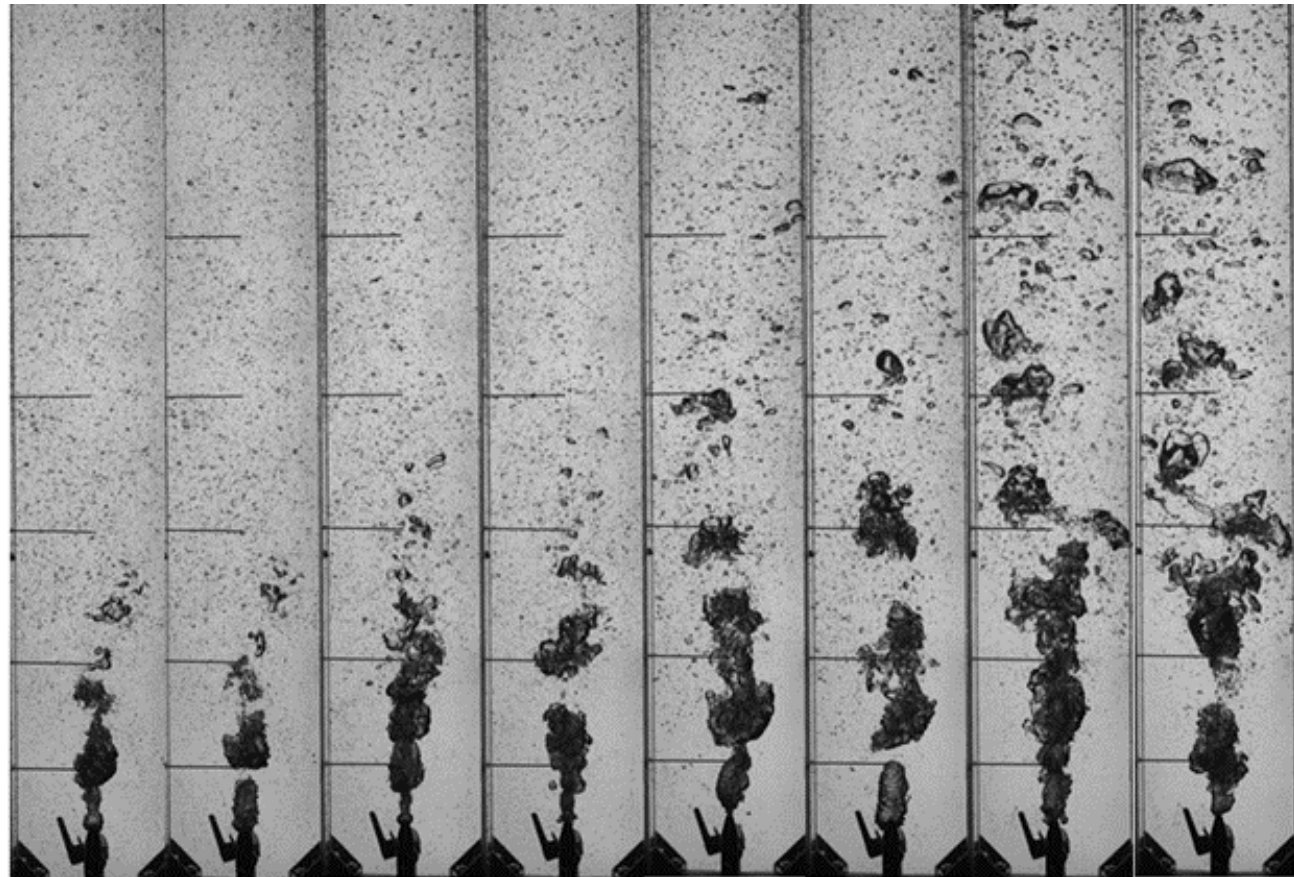
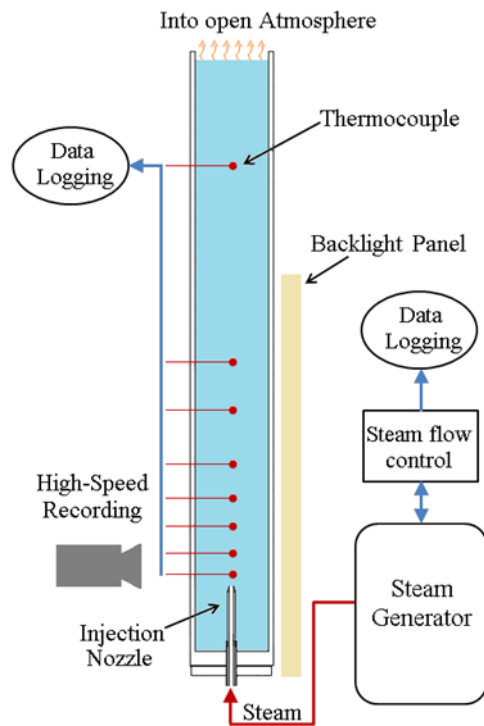
2016-2017

# Proyecto FILTRONUC



2012-2015

# APLICACION DE LA METODOLOGIA DE ANALISIS INTEGRADO DE LA SEGURIDAD A REACTORES NUCLEARES AVANZADOS (ISAMAR)

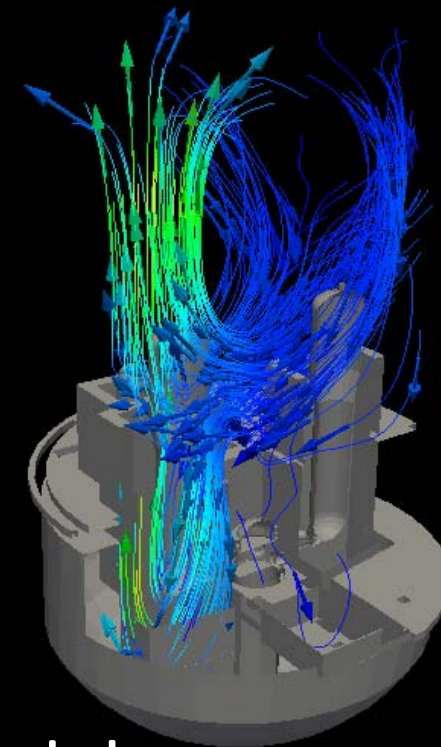
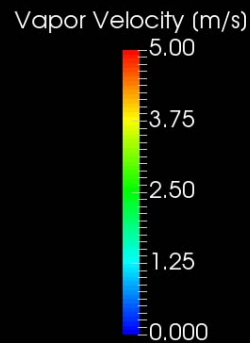
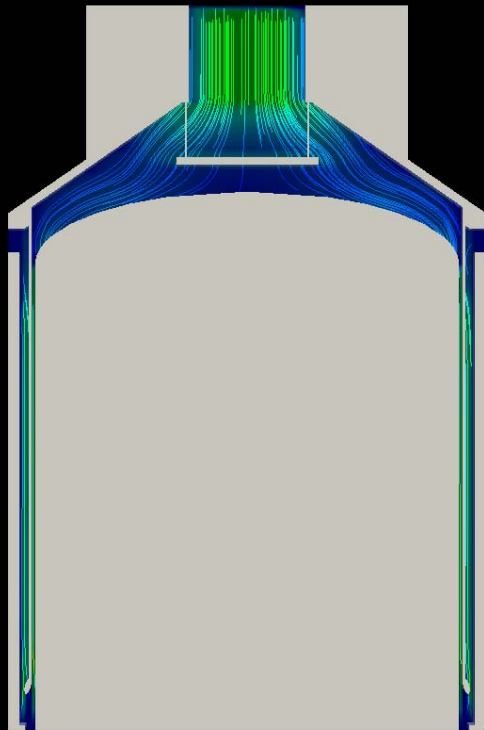
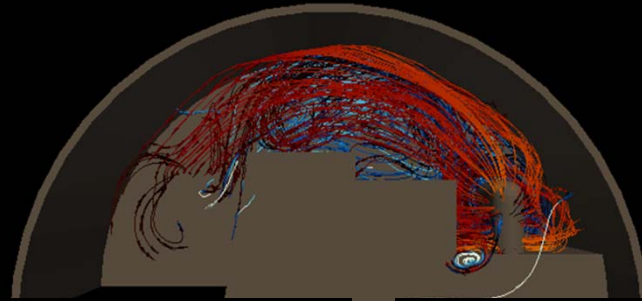


2016-2018

# Prevención y gestión de secuencias de Accidente severo en reactores avanzados y convencionales (PYGAS)



Shield building



Inner containment

t=60s

## AP1000® 3D GOTHIC model

2016-2018

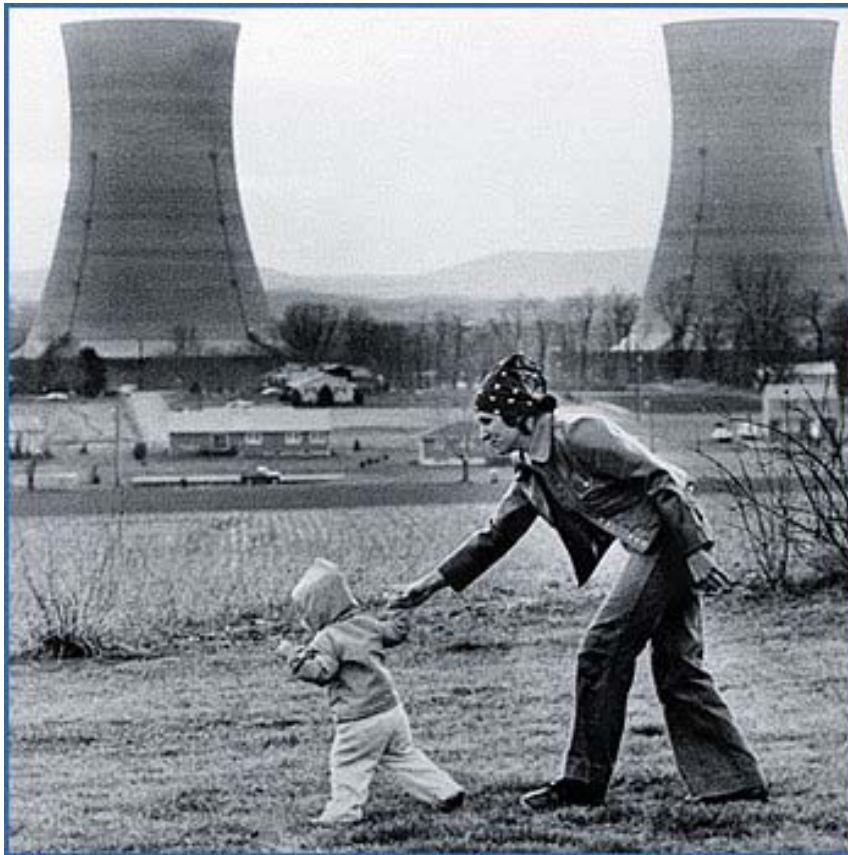
# Proyecto PYGAS



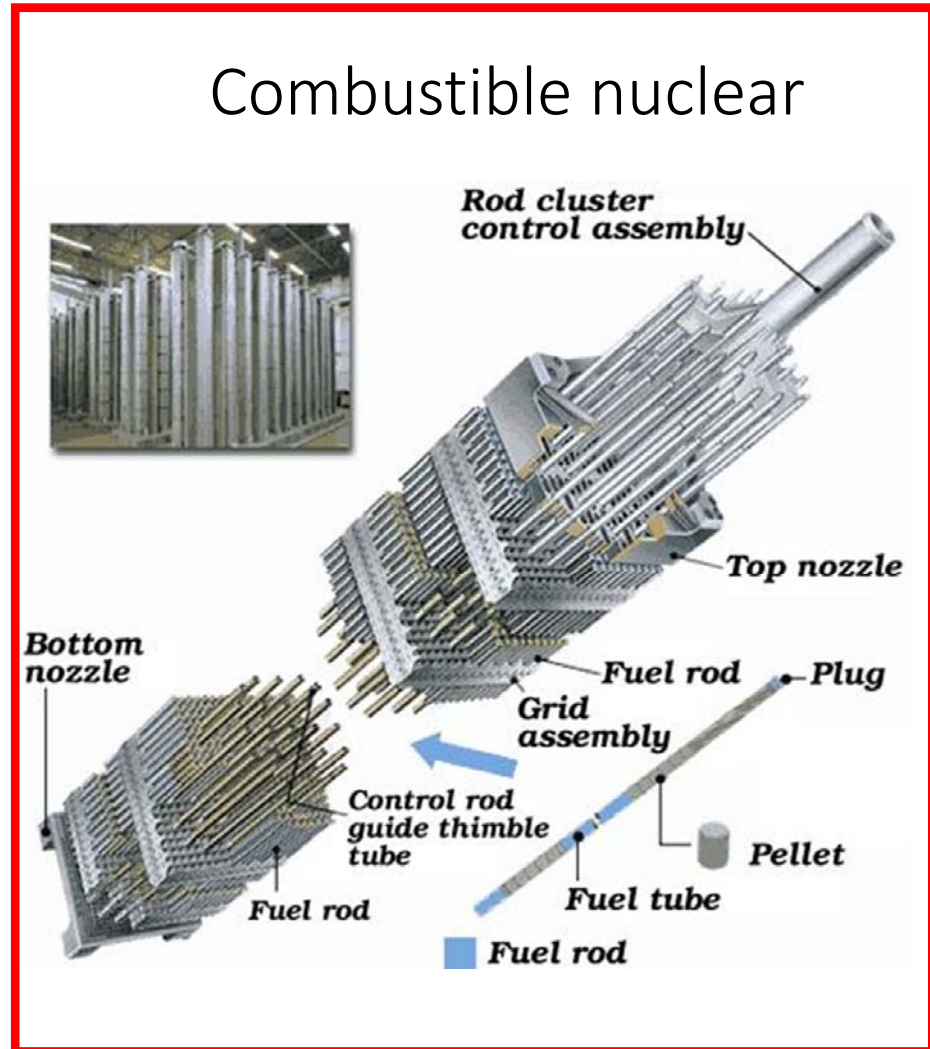


# Líneas de investigación post-Fukushima

## Seguridad nuclear

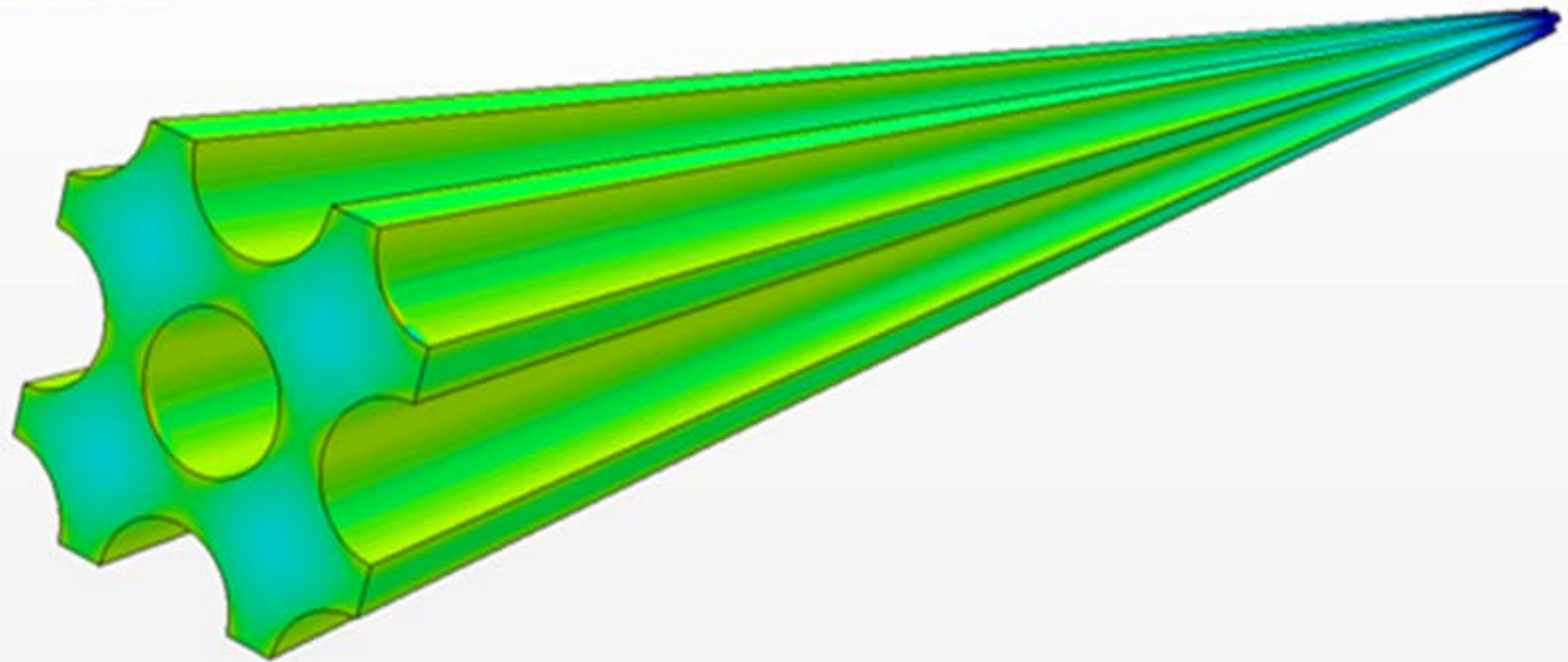


## Combustible nuclear



2013-2016

# SIMULACIÓN BEST-ESTIMATE DE UN ELEMENTO DE COMBUSTIBLE BWR CON CÓDIGOS CFD

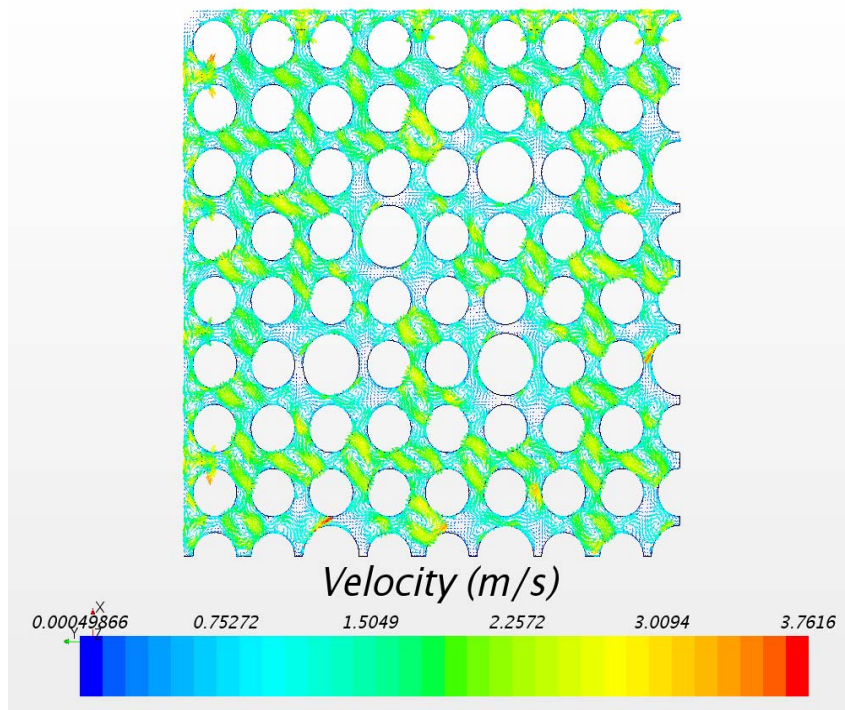


2014

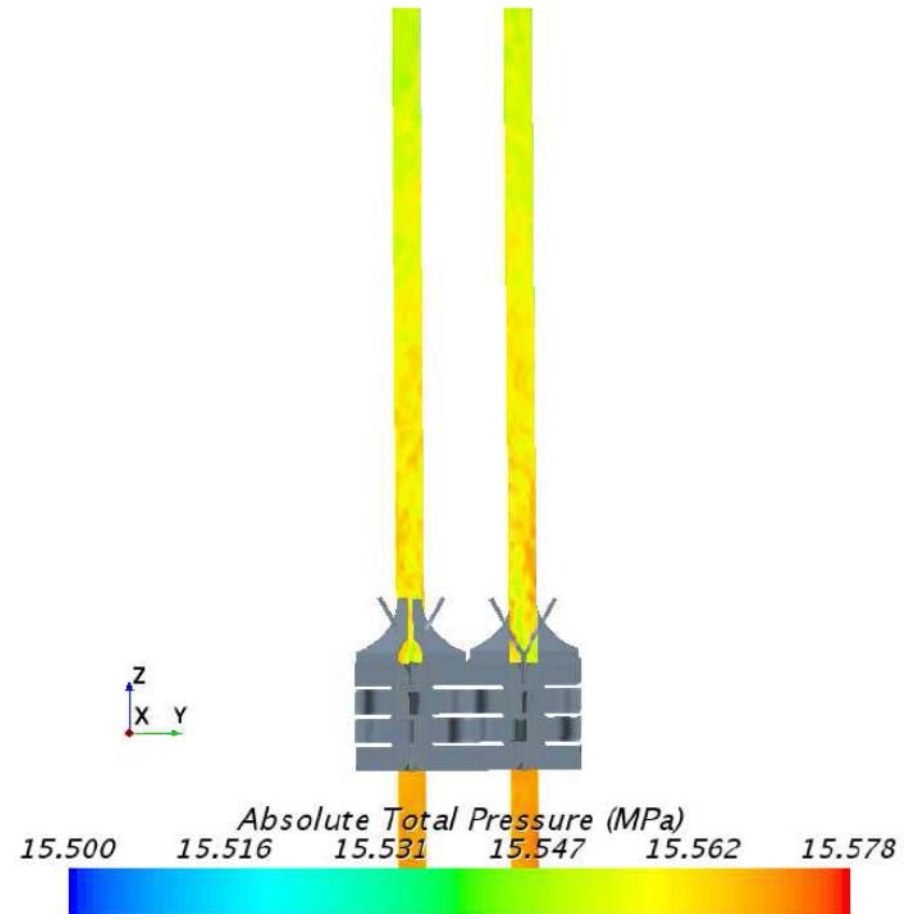


2015-2016

### ANÁLISIS HIDRODINÁMICO Y MECÁNICO DE UN ELEMENTO PWR CON STAR-CCM+



### ANÁLISIS DE VIBRACIÓN DE UNA BARRA COMBUSTIBLE EN UN ELEMENTO PWR



2017-2019

