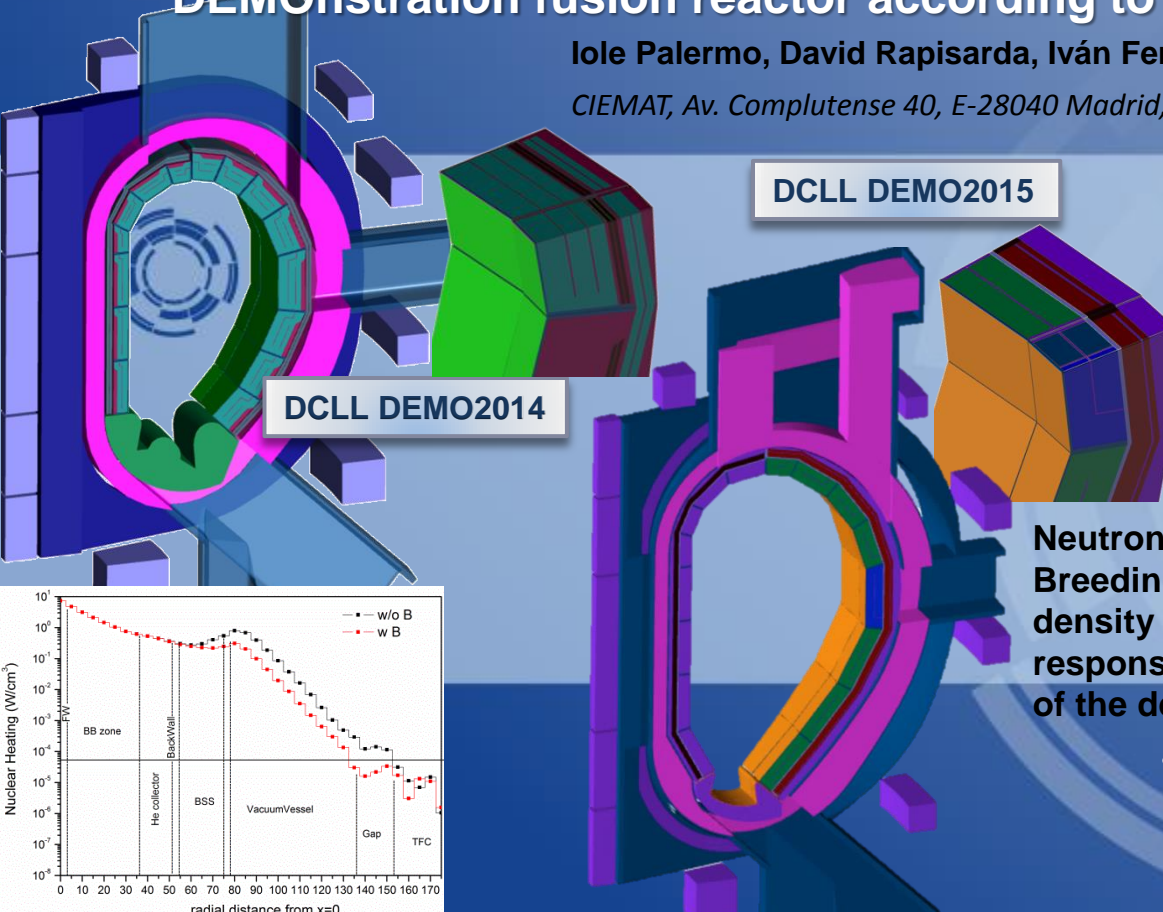


Optimization process for the design of the DCLL blanket for the European DEMOnstration fusion reactor according to its nuclear performances

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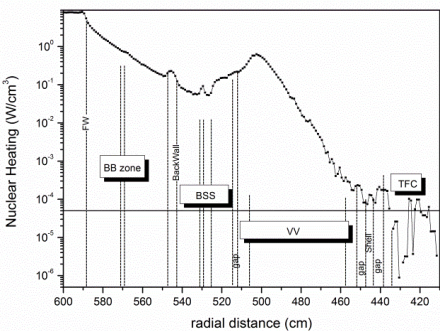
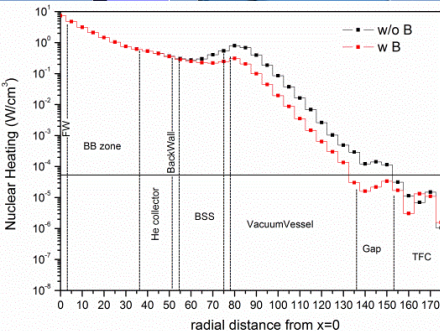
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- A 3D fully heterogeneous DCLL neutronic design has been developed for the DEMO baseline 2014 determining its behaviour under the real operational conditions of the DEMO reactor. Consequent actions have been adopted to improve its performances.

Neutronic assessments have addressed the Tritium Breeding Ratio, Multiplication Energy Factor, power density distributions, damage and shielding responses demonstrating the technological viability of the design.

- The model has been then adapted to the subsequent DEMO baseline 2015 (with a more powerful and bigger plasma, smaller divertor and bigger blanket segments), implying new design choices to improve the reactor nuclear performances



		T/n DCLL 2014				T/n DCLL 2015			
		n ⁰	V1	V2	new div.	Δ%	V0	new div.	Δ%
BB	OB	0.749	0.741	0.718			0.829	0.787	
	IB	0.292	0.301	0.291			0.328	0.311	
	total	1.041	1.042	1.009	-3.3%		1.158	1.098	-5.4%
BSS	OB	0.033	0.025	0.025			0.069	0.067	
	IB	0.057	0.038	0.037			0.039	0.038	
	total	0.090	0.063	0.061	-2%		0.109	0.105	-3.5%
TBR		1.131	1.104	1.070	-3.2%		1.266	1.203	-5.2%



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