Meeting's results

Monday 13 November 2023

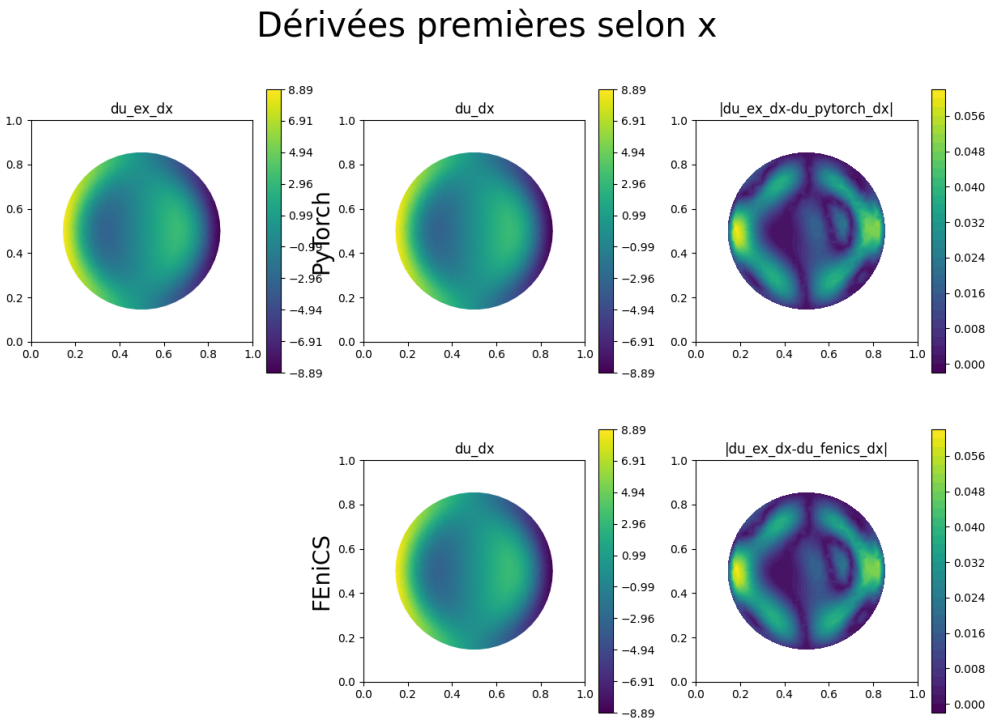
LECOURTIER Frédérique

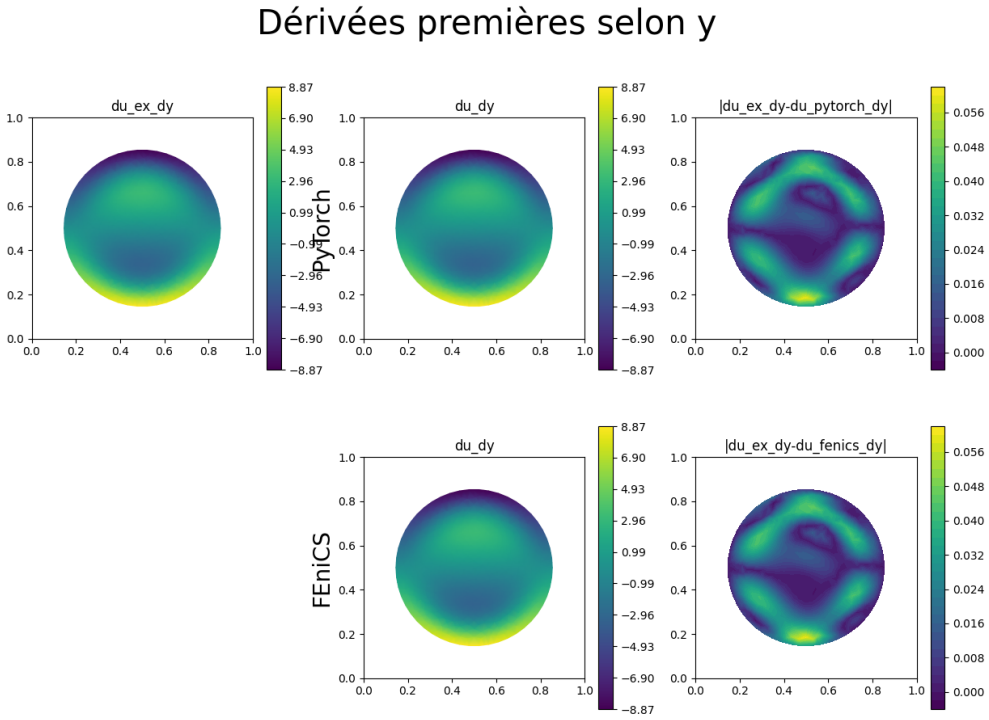
1 Calcul des dérivées

1.1 Entraînement du PINNs sur Ω (cercle)

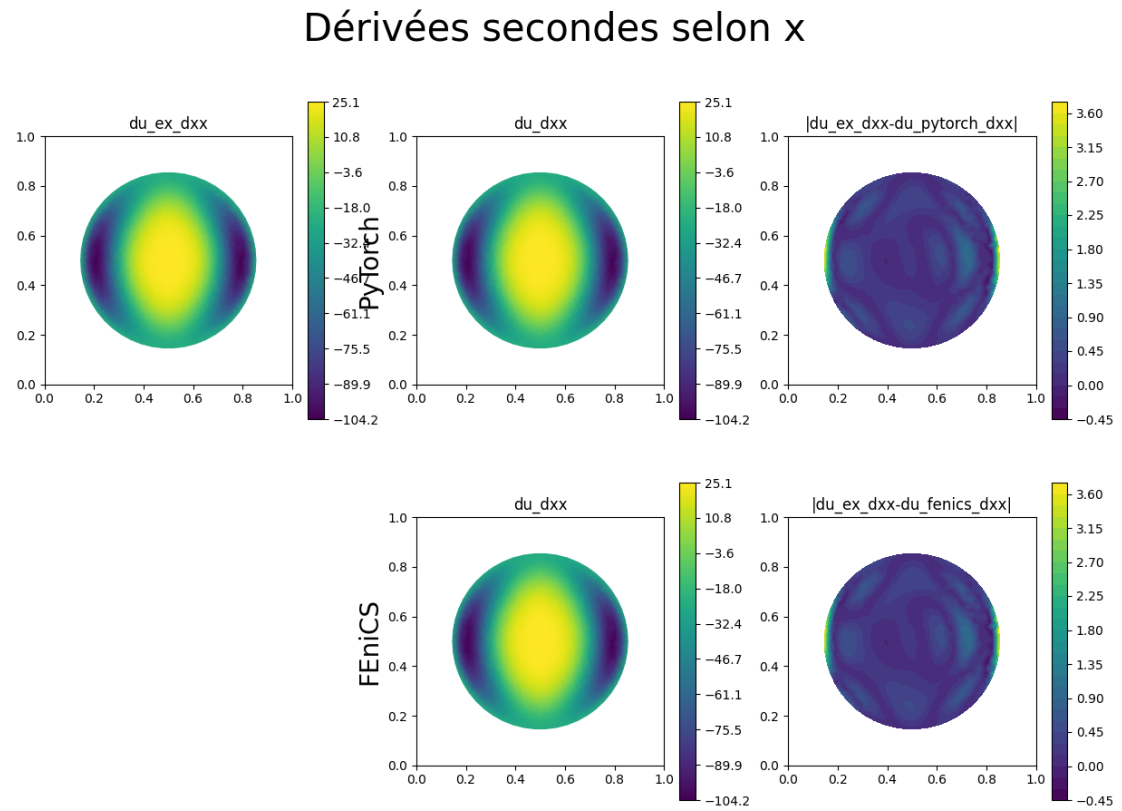
1.1.1 Prédiction sur Ω

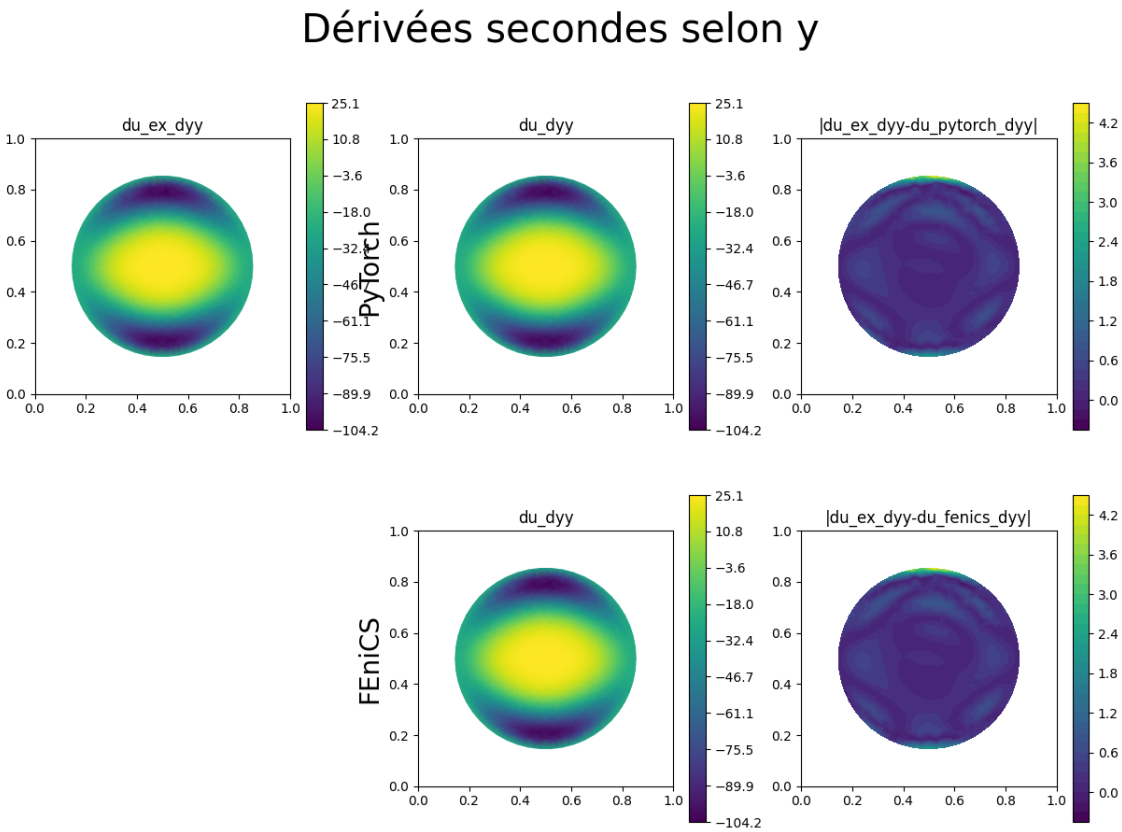
Dérivées premières :





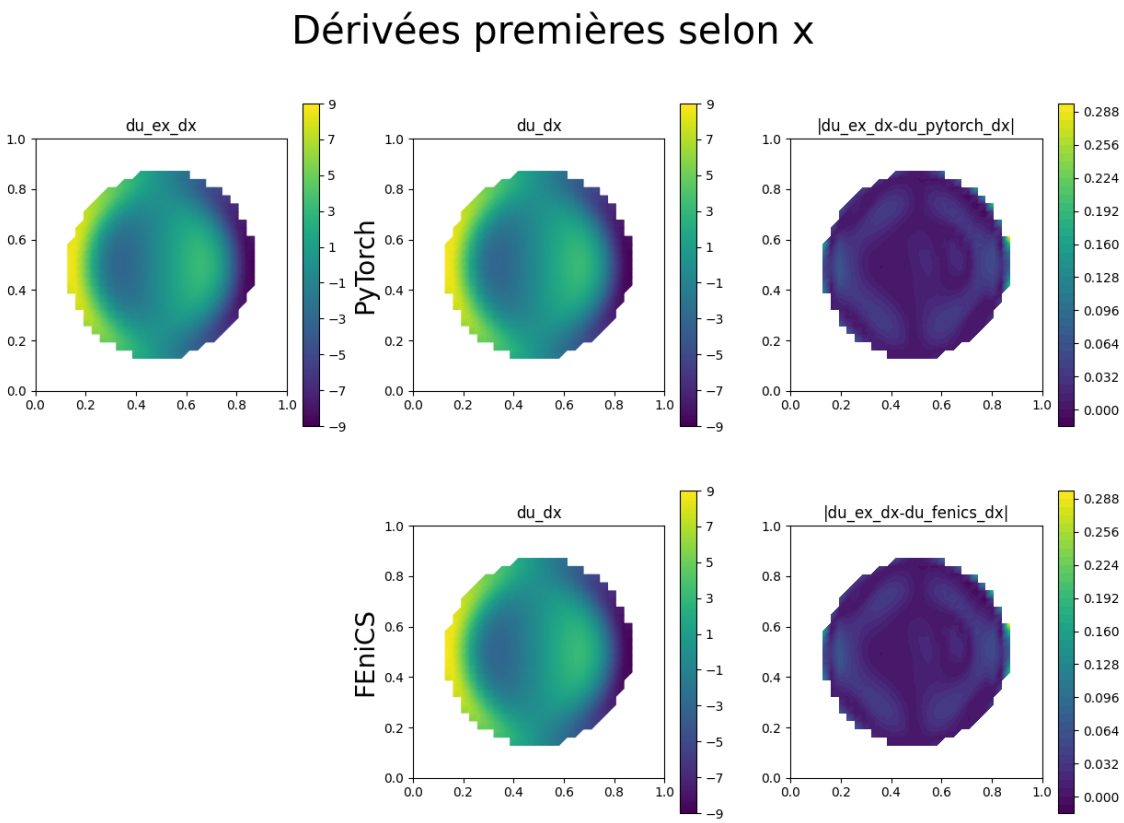
Dérivées secondes :

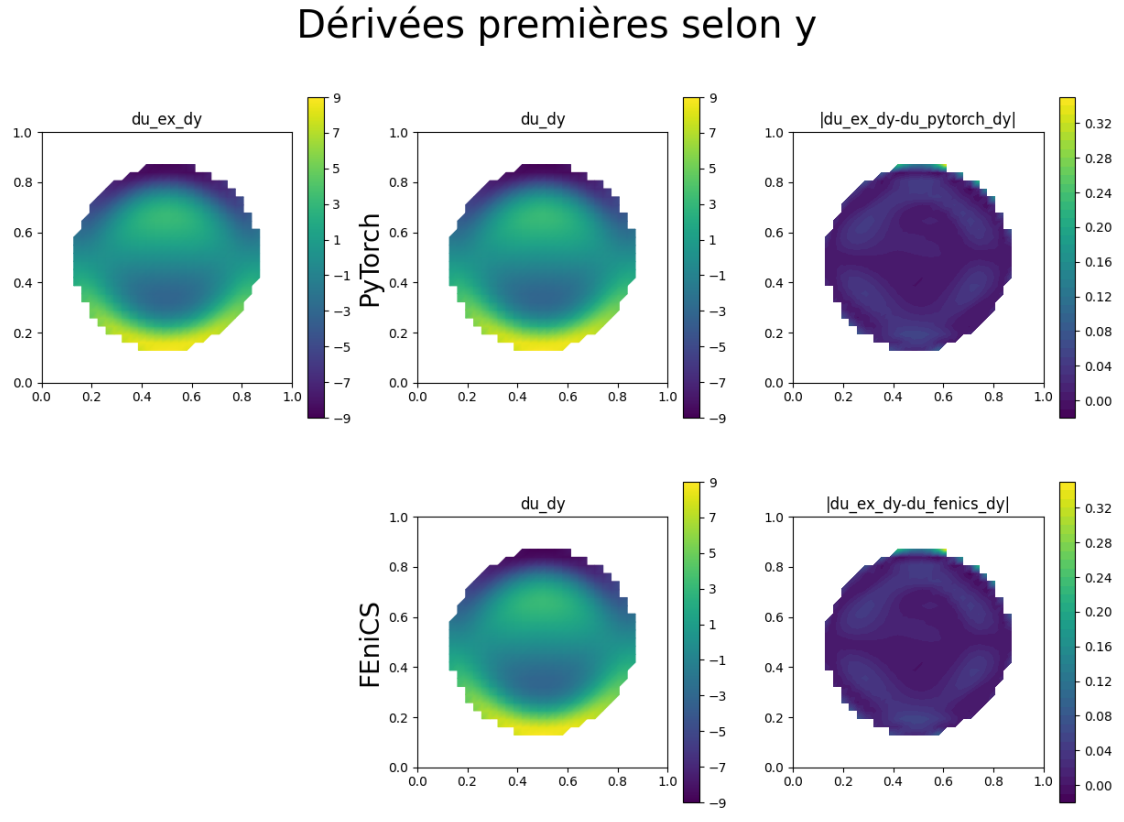




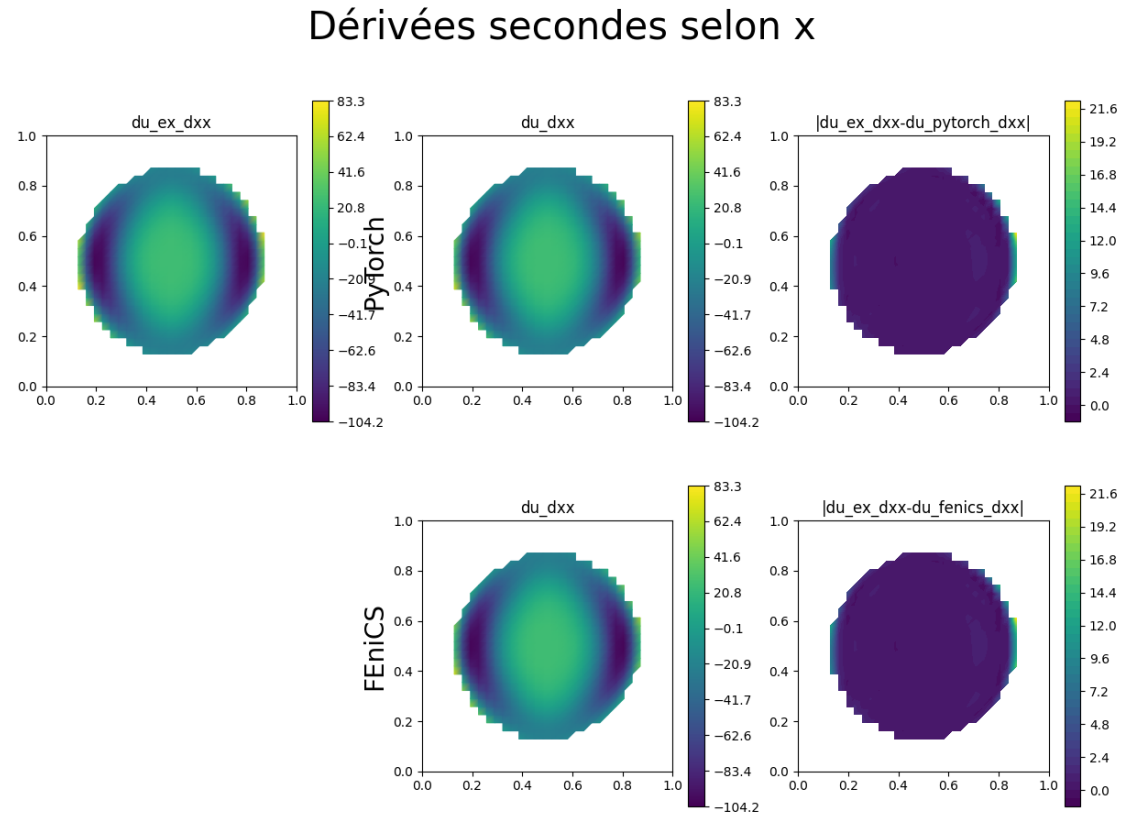
1.1.2 Prédiction sur Ω_h

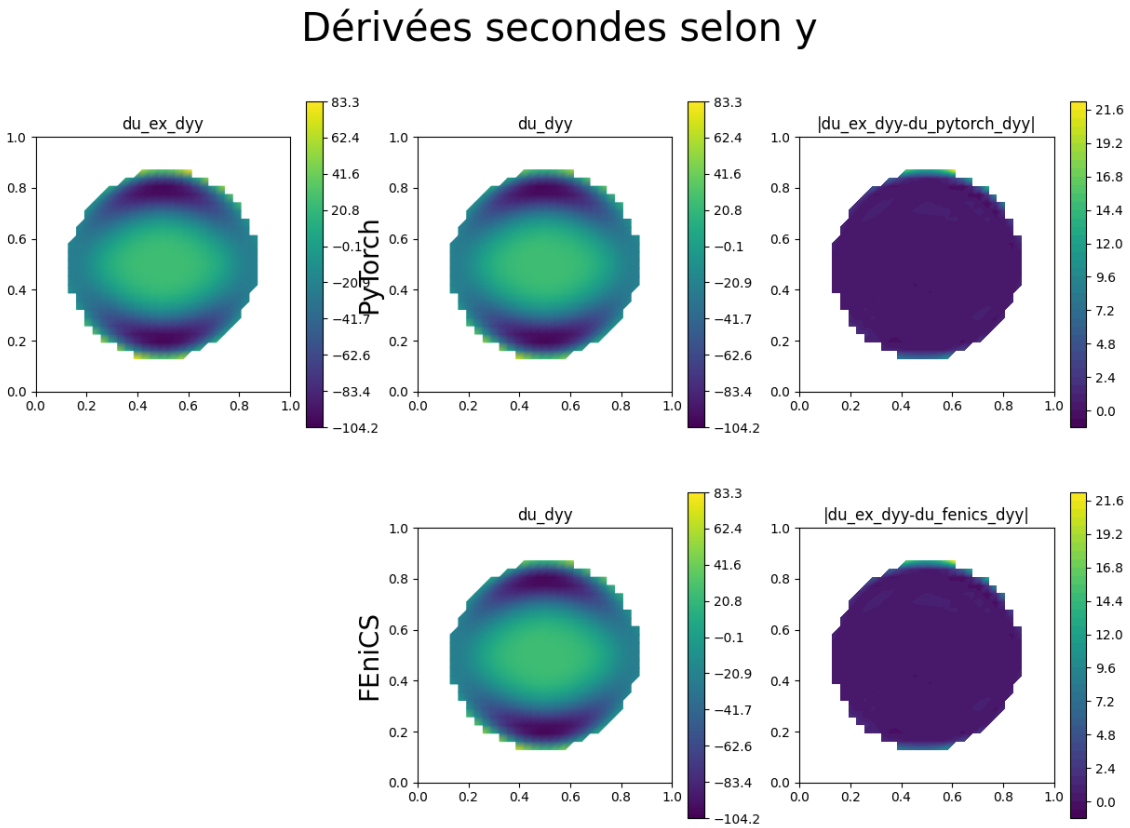
Dérivées premières :





Dérivées secondes :

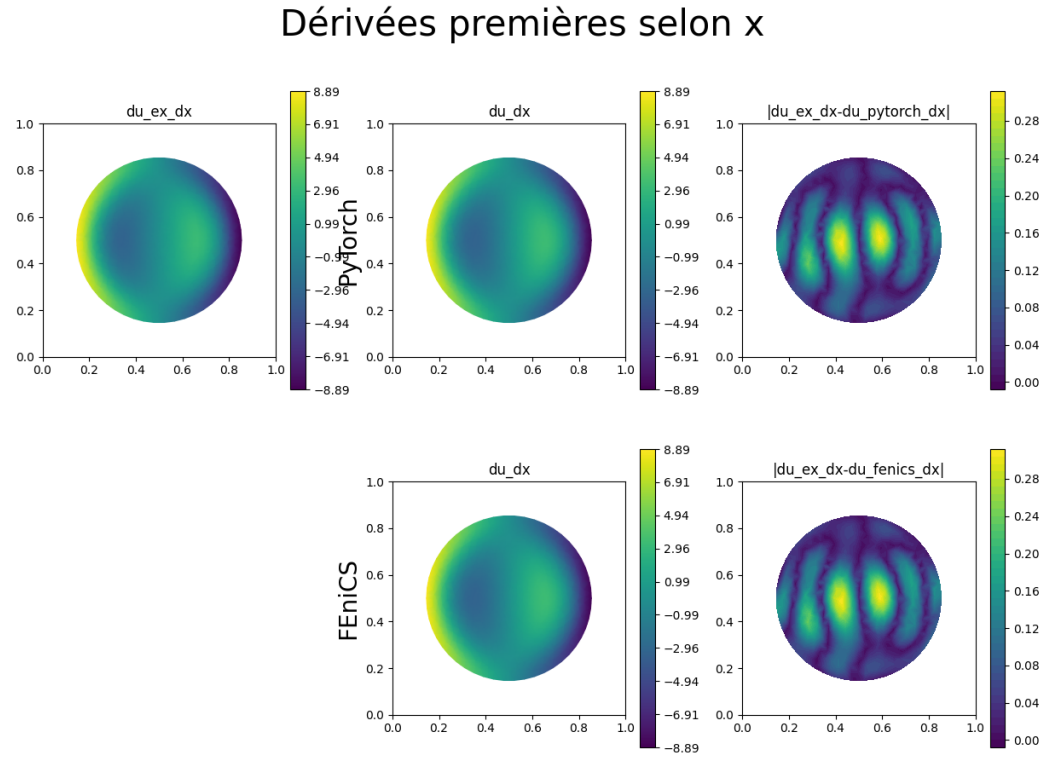


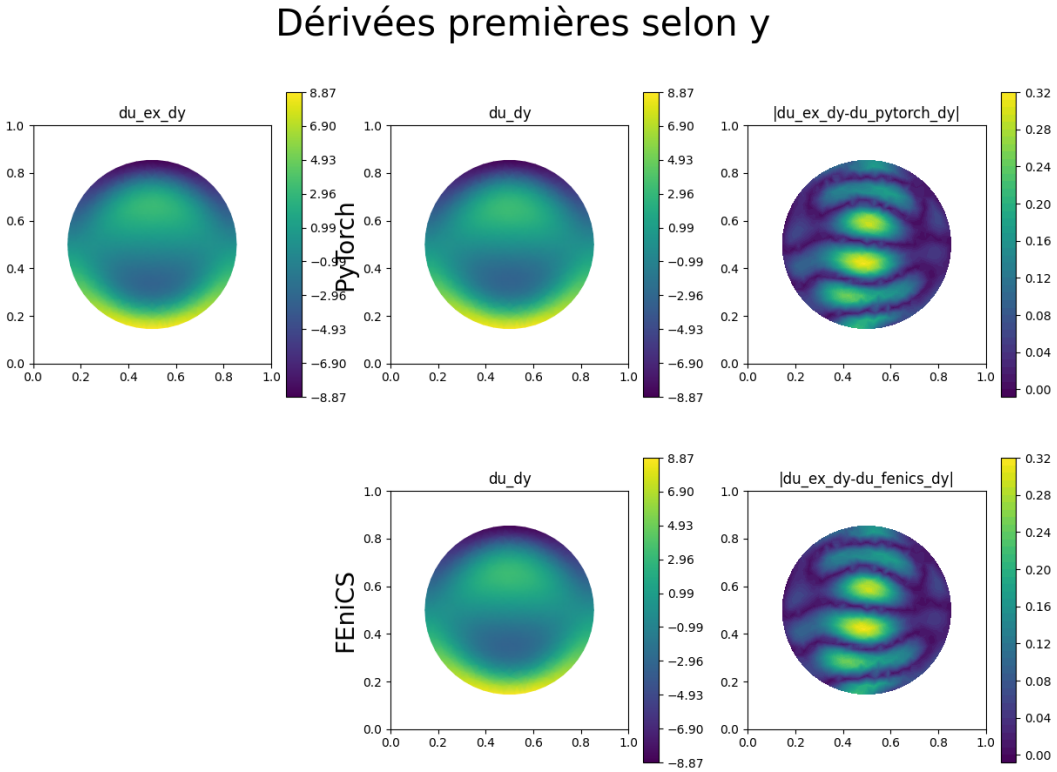


1.2 Entraînement du PINNs sur $\mathcal{O}$ (carré)

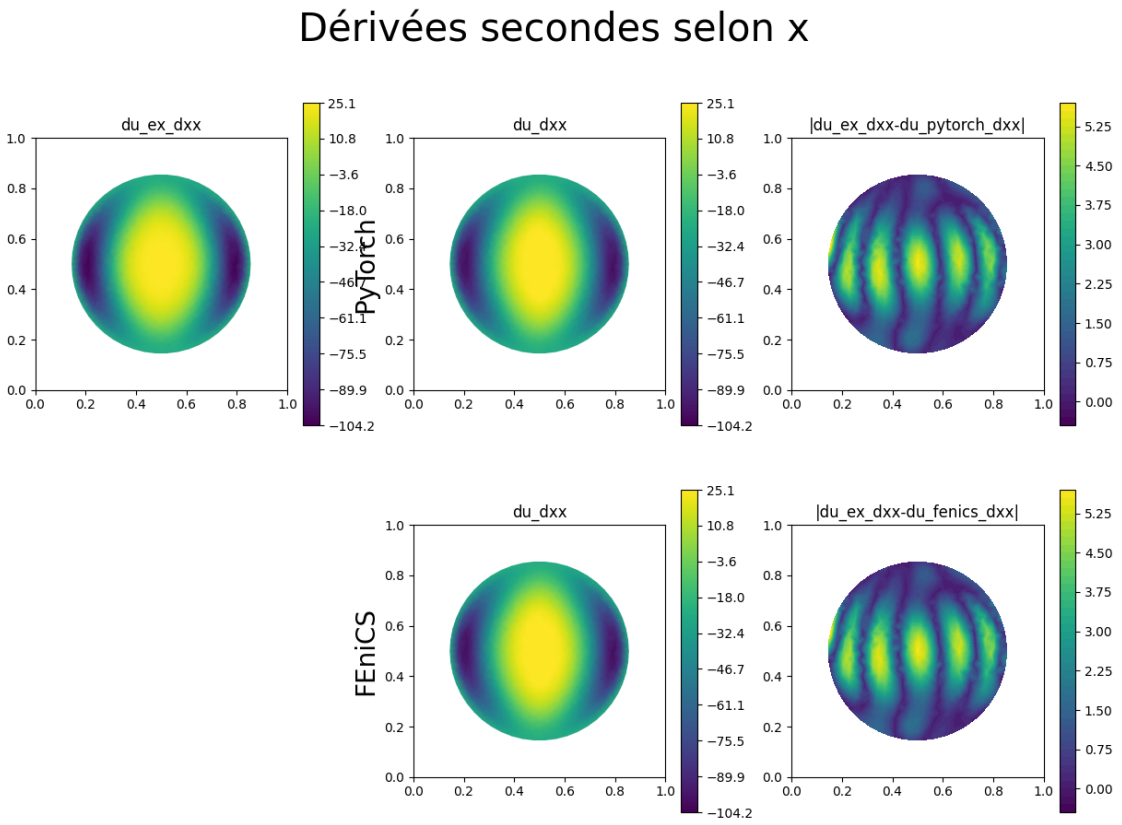
1.2.1 Prédiction sur Ω

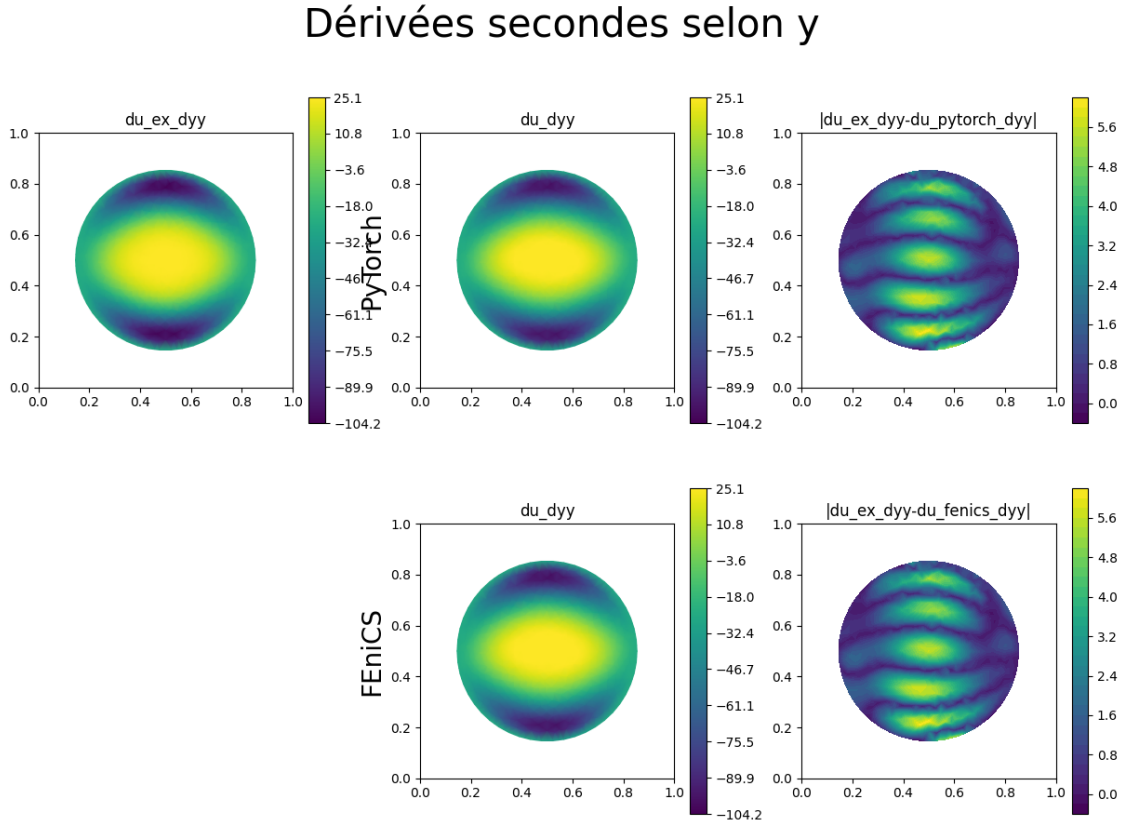
Dérivées premières :





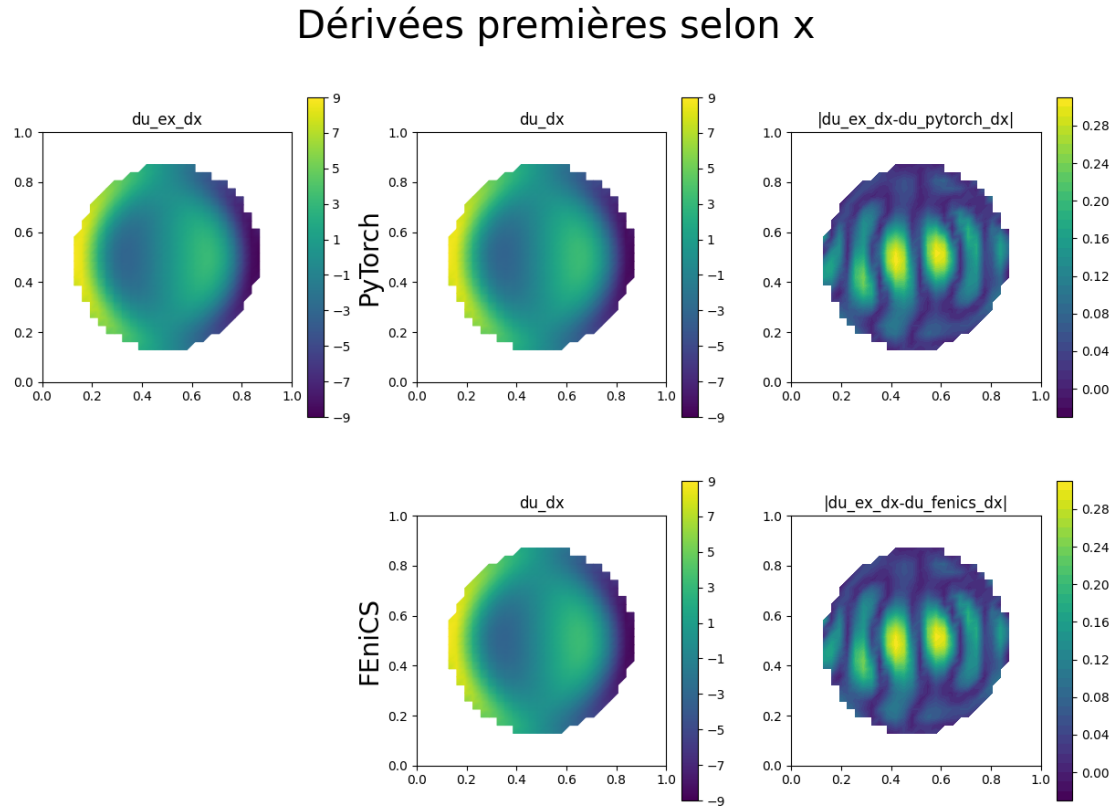
Dérivées secondes :

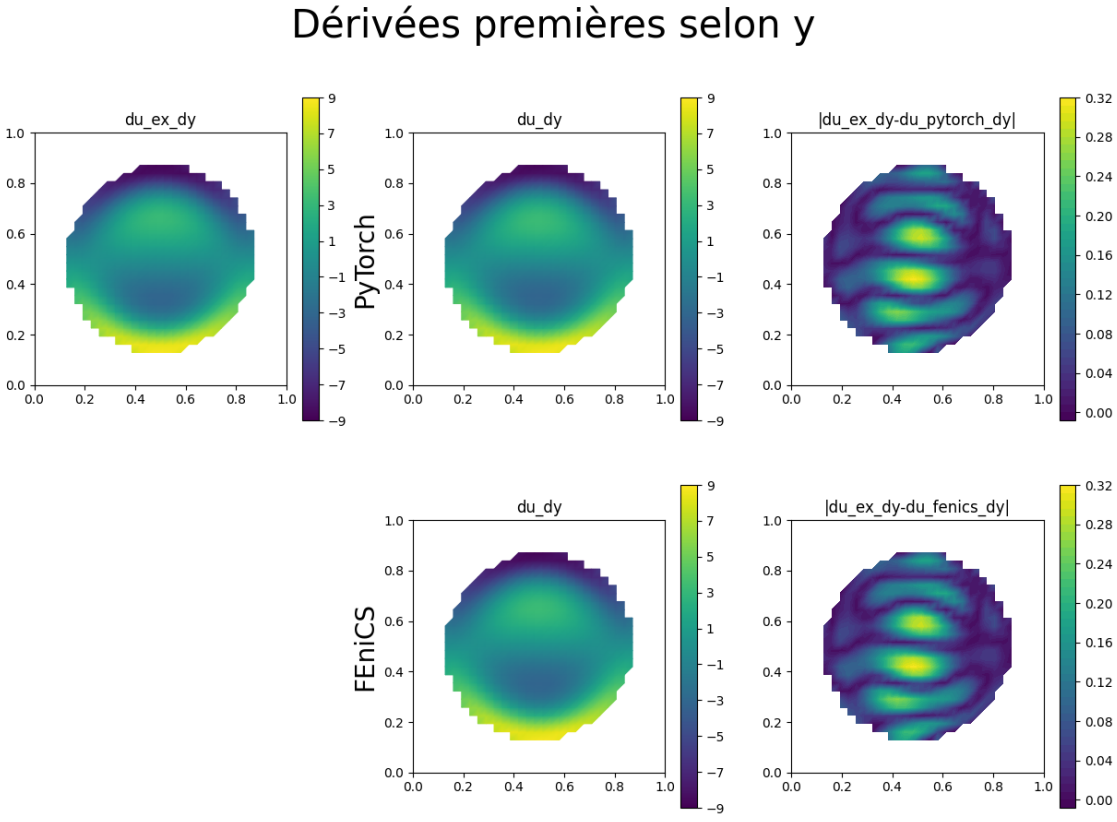




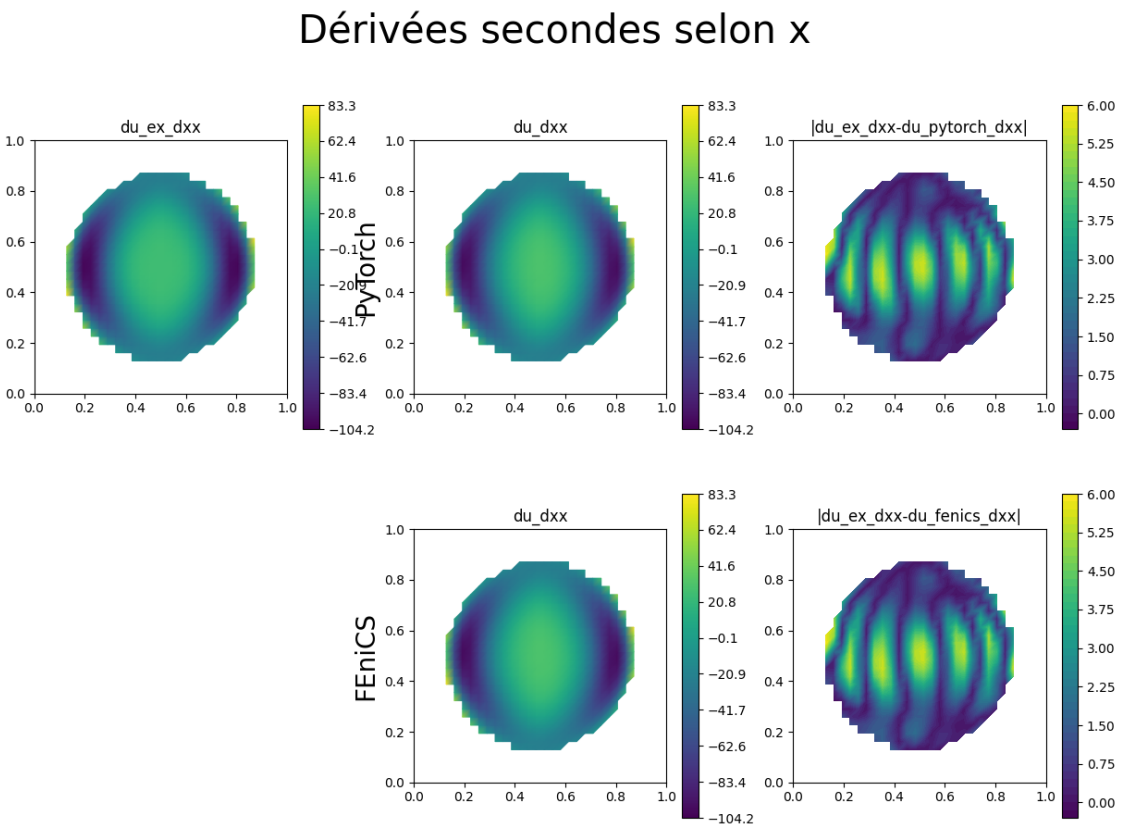
1.2.2 Prédiction sur Ω_h

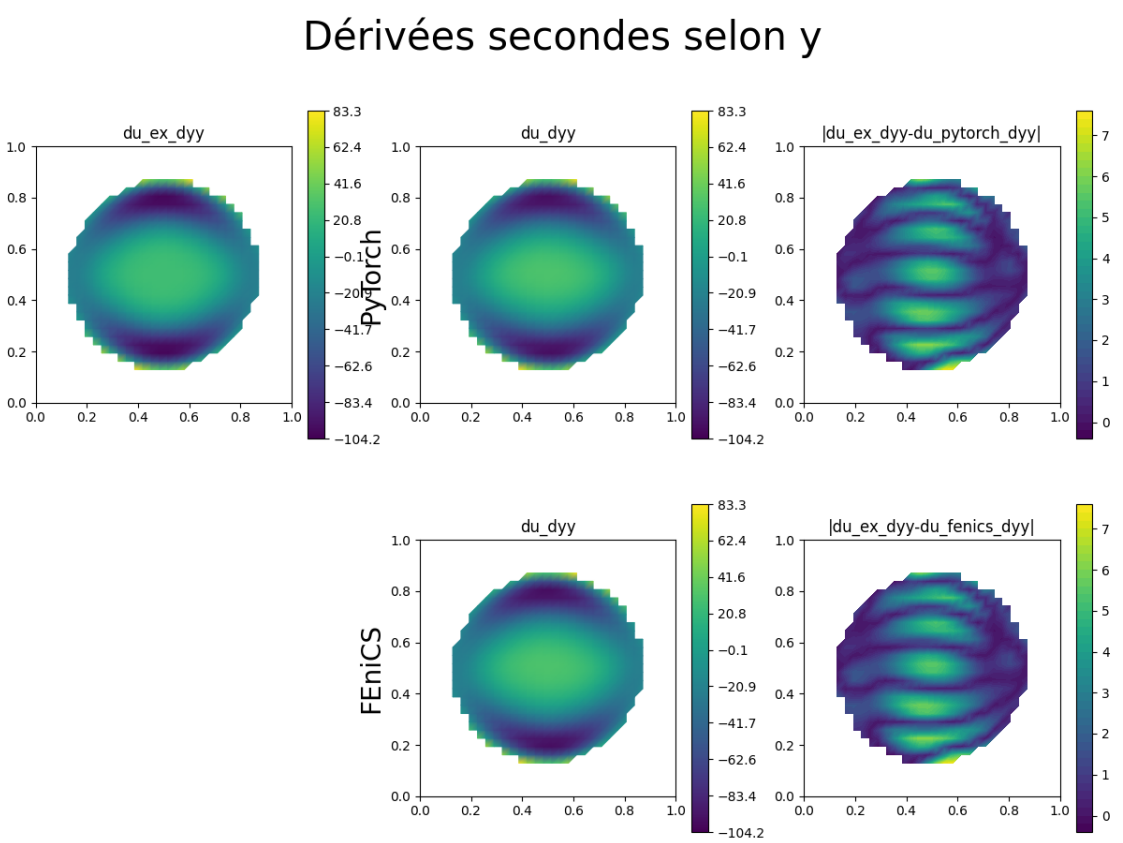
Dérivées premières :





Dérivées secondes :





2 Test sur le degré de la solution exacte

$deg(u_\theta)=10 \quad V=Space(deg(u)) \quad V_{phi}=Space(deg(u_\theta))$

$deg(u)=1$	$deg(u_{ex})$	no proj	*u project on*				
			1	2	3	4	$deg(u_\theta)$
FEM	$deg(u)$	0.007416118179933	0.00741611817993274	0.007416118179931677	0.007416118179935782	0.007416118179932973	0.007416118179932941
	$deg(u_\theta)$	0.02130646160952785	0.021306461609527597	0.021306461609526366	0.021306461609530095	0.021306461609527795	0.021306461609527382
Corr add (FEM)	$deg(u)$	0.01674761243360696	0.015265611153217071	0.01674371508690137	0.016747605247132074	0.016747612427473926	0.01674761243360725
	$deg(u_\theta)$	0.00014098518106003534	0.006800307566283219	0.00038656350163388697	0.00014191717280804126	0.00014098576336019688	0.00014098518105995825