

## *Dynamique Nucléaire*

$t = 0$

**A la recherche d'un "système géant" dans la réaction U+U  
proche de la barrière coulombienne**  
Cédric GOLABEK (GANIL Caen)

**Etude des signaux de transition de phase dans les noyaux**  
Francis GAGNON-MOISAN (IPN Orsay)

# Physique nucléaire

- Problème à  $N$ -corps (*découplage du mouvement du nucléon et de ses degrés de liberté internes*)

- $N$  grand mais fini (*max 238+238*)

- systèmes auto-liés

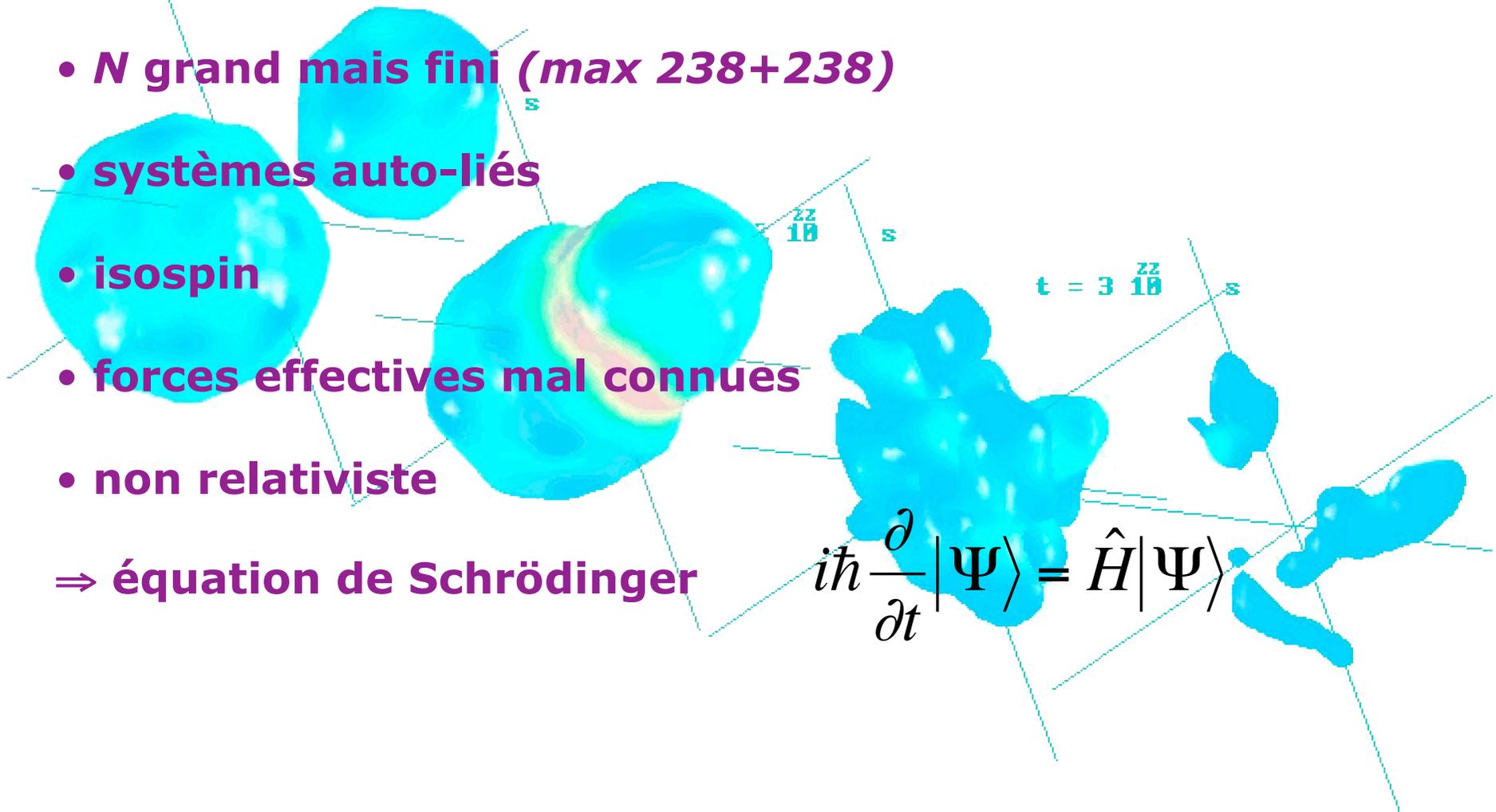
- isospin

- forces effectives mal connues

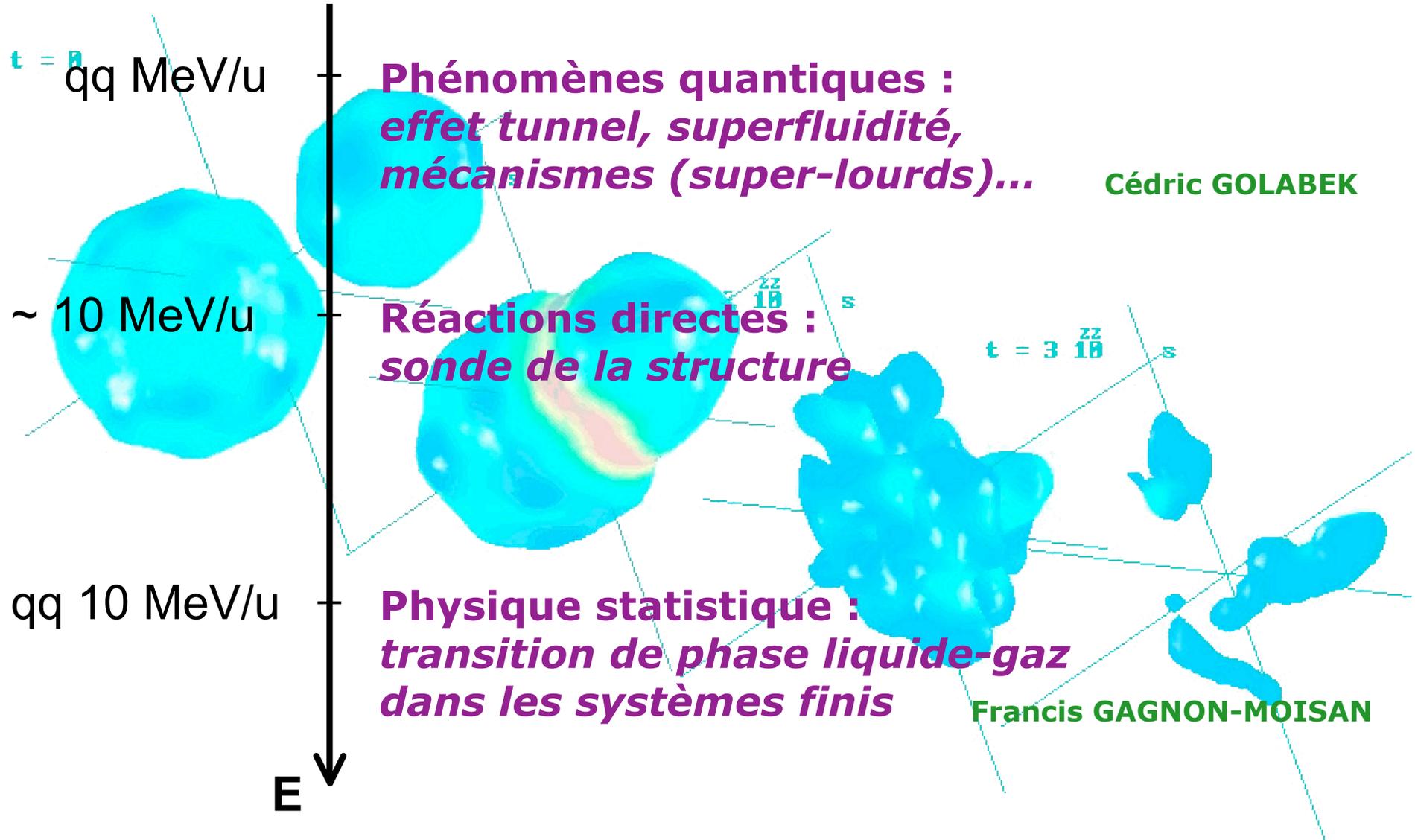
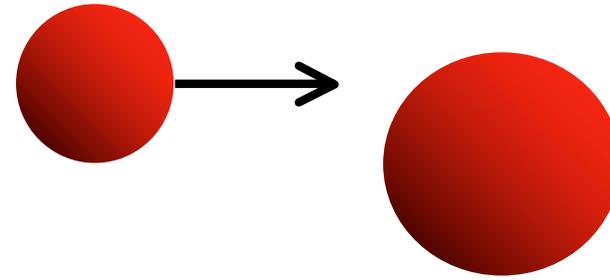
- non relativiste

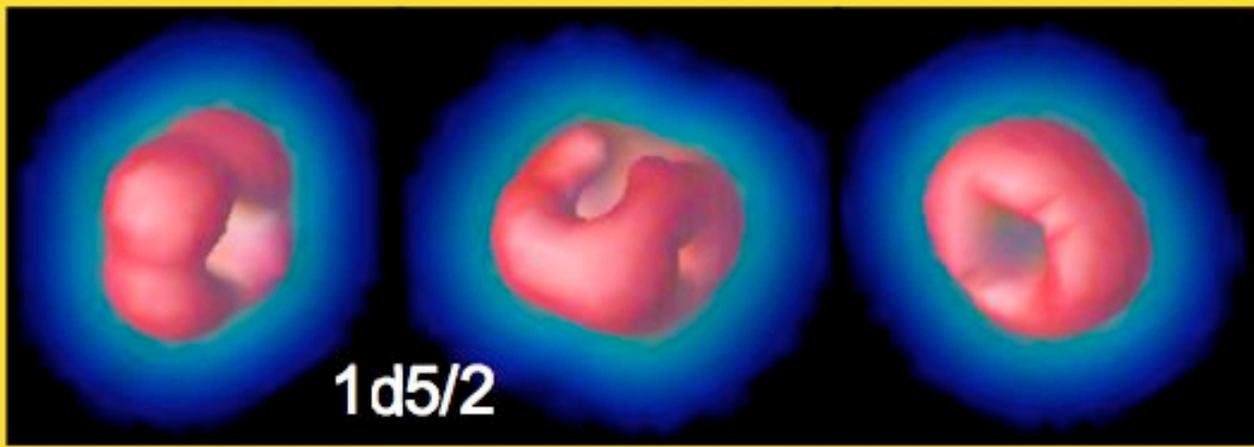
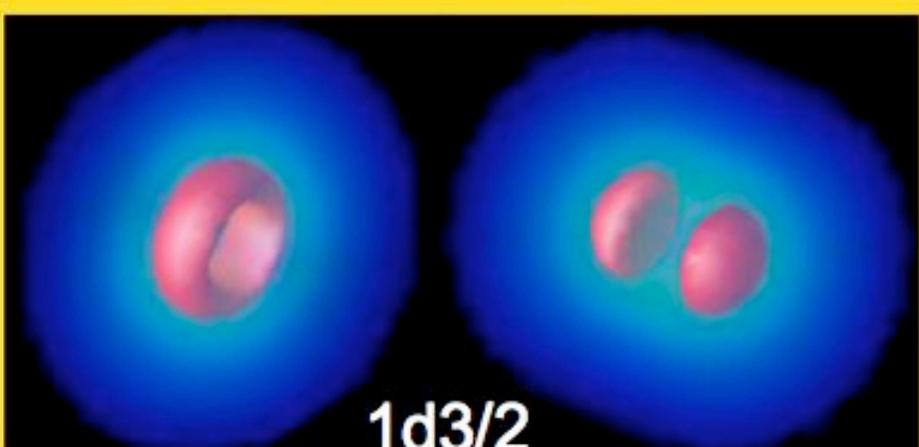
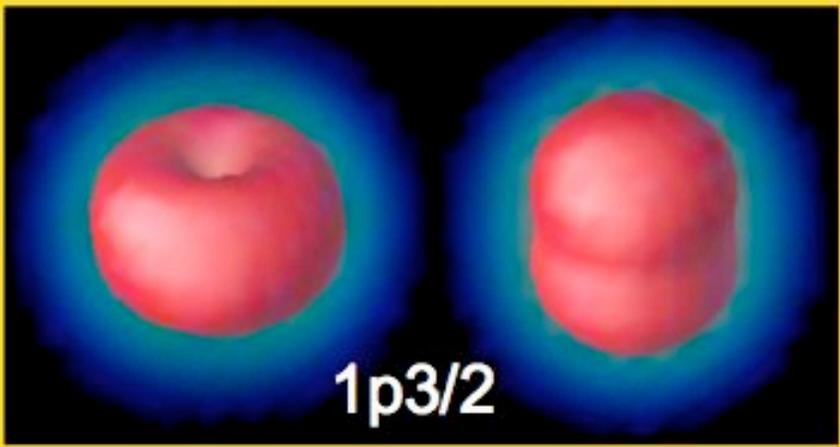
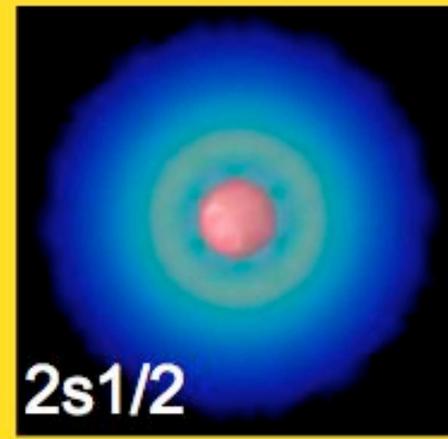
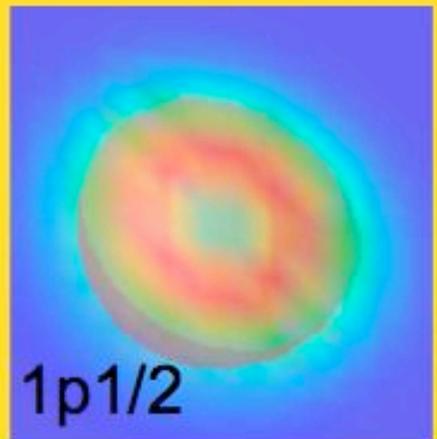
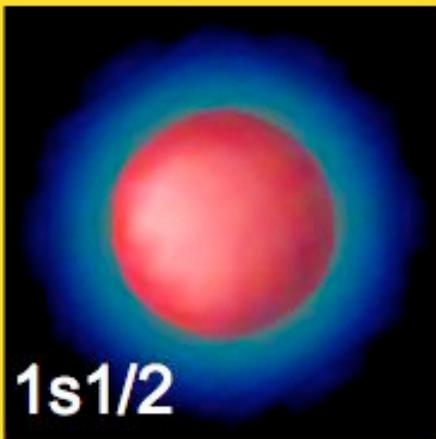
⇒ équation de Schrödinger

$$i\hbar \frac{\partial}{\partial t} |\Psi\rangle = \hat{H} |\Psi\rangle$$



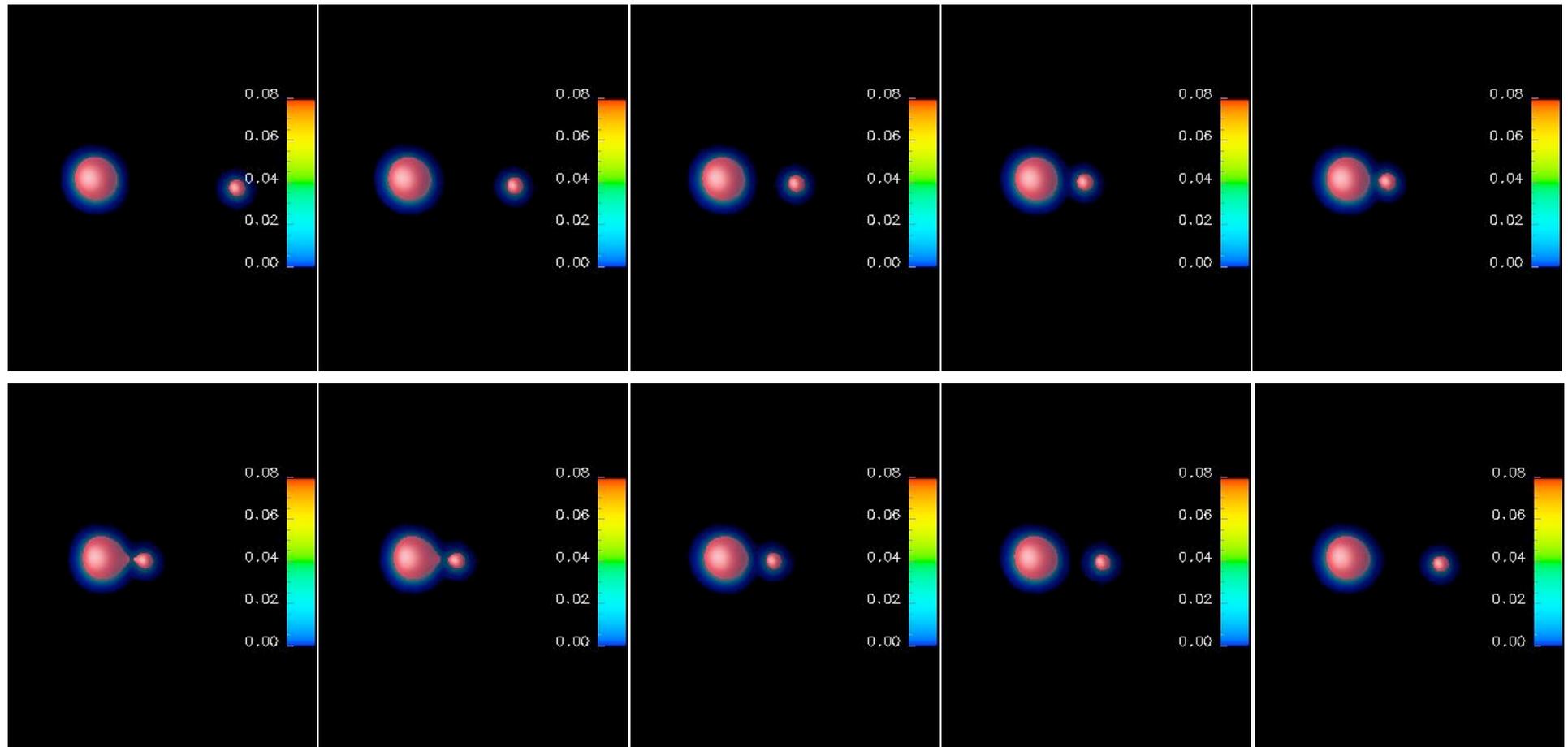
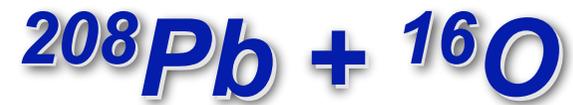
# Dynamique nucléaire





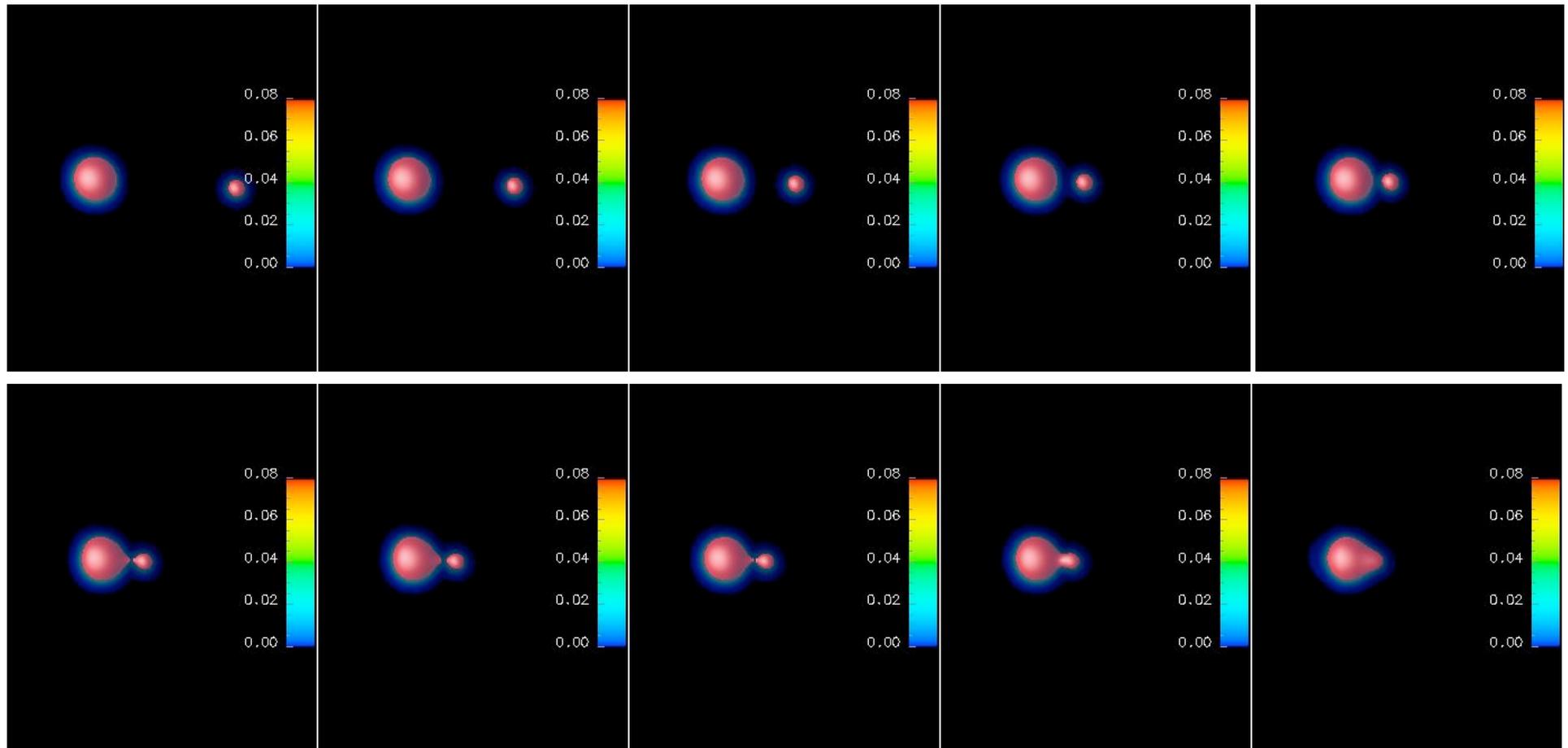
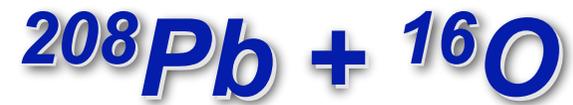
...

# Barrières de fusion de noyaux sphériques

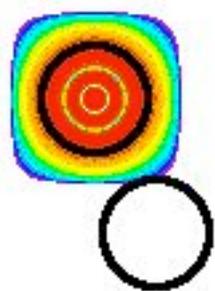


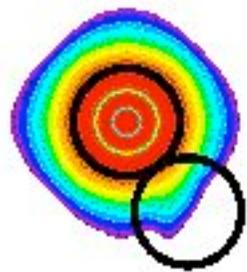
74.44 MeV

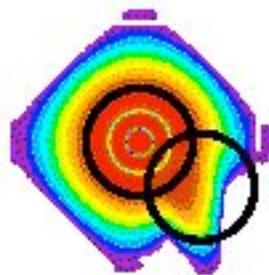
# Barrières de fusion de noyaux sphériques

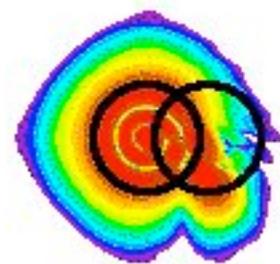


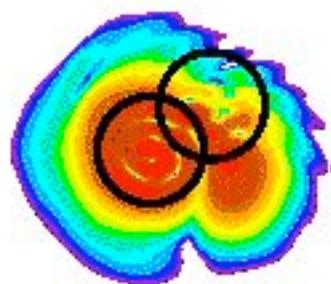
74.45 MeV

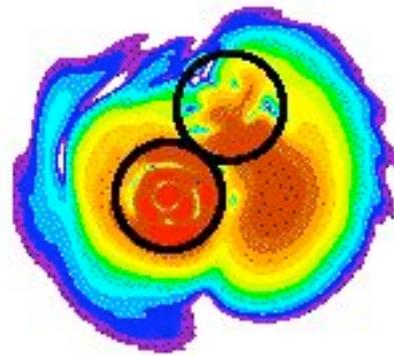


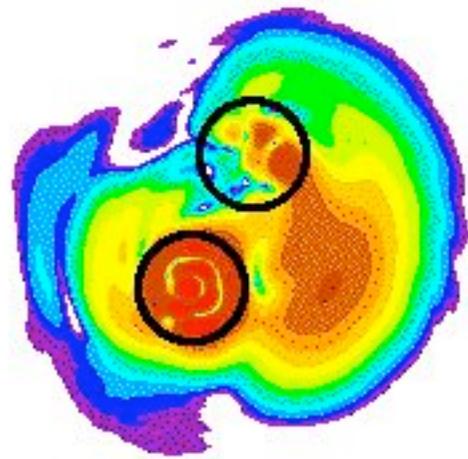


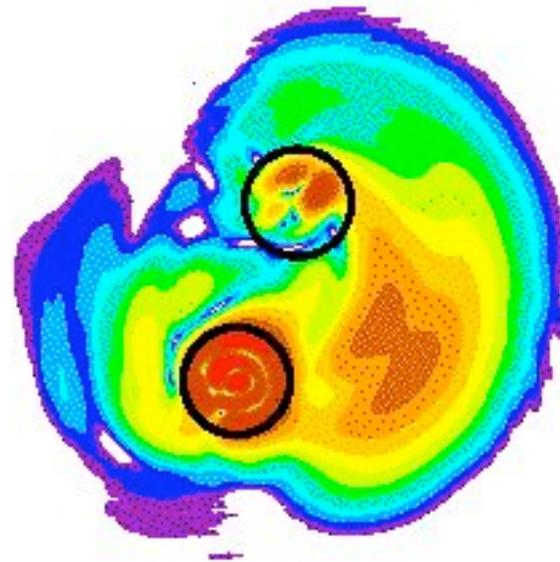


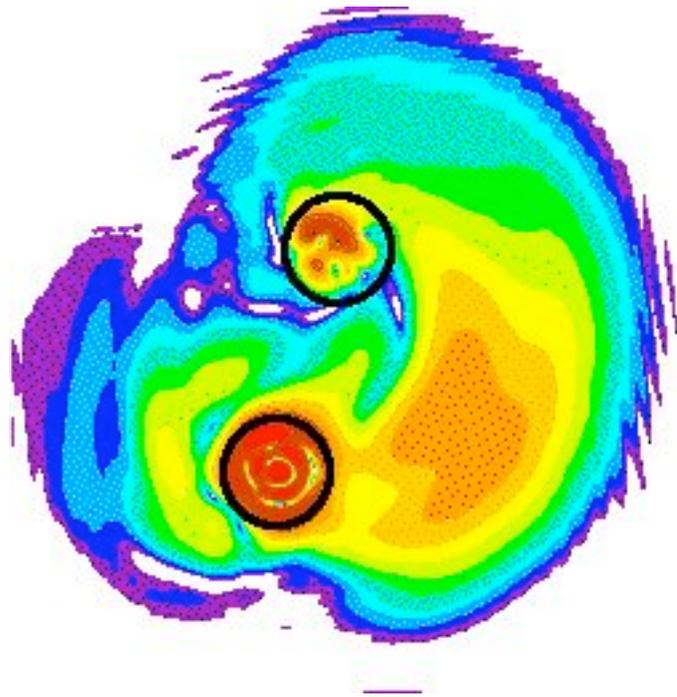




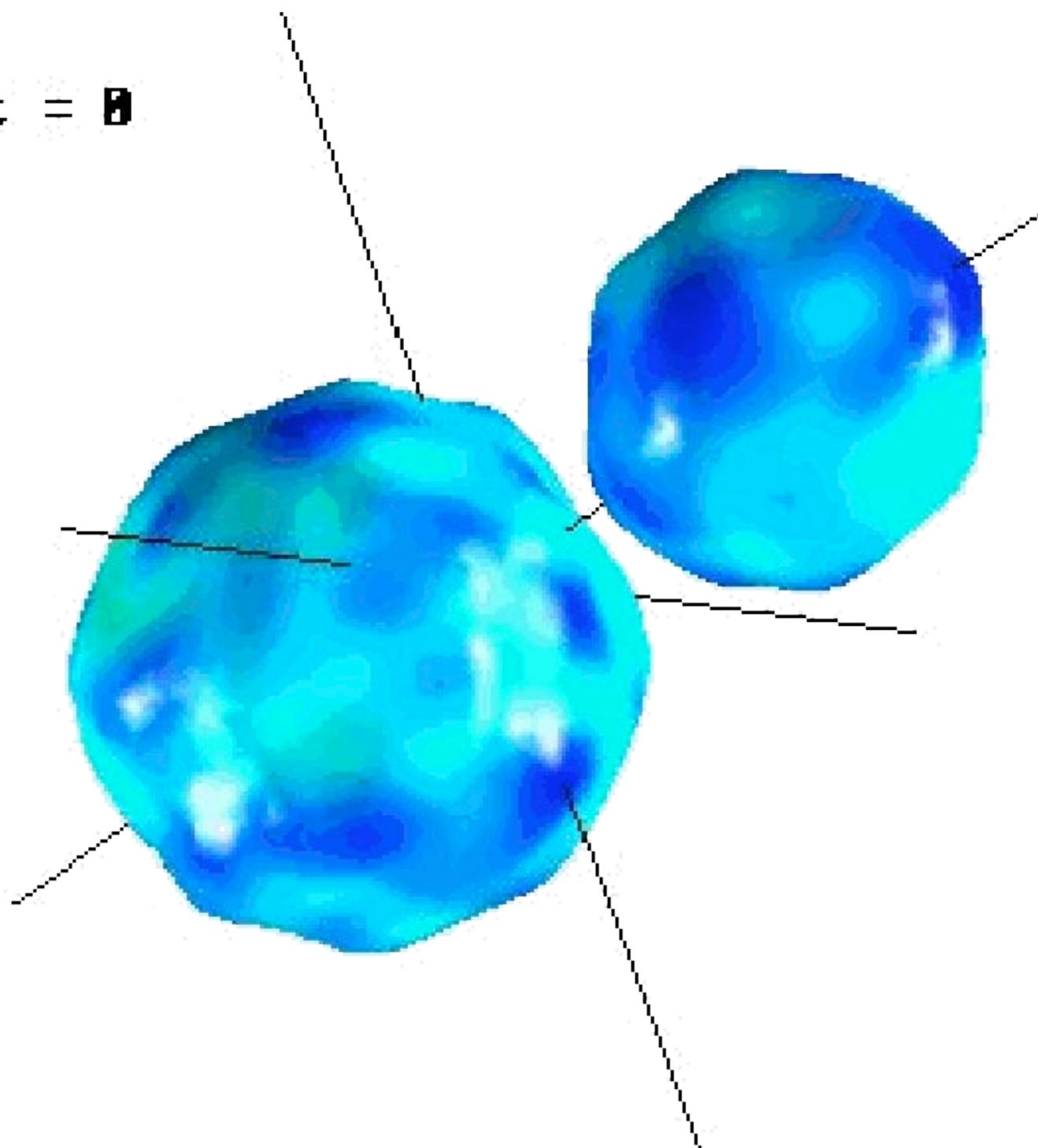






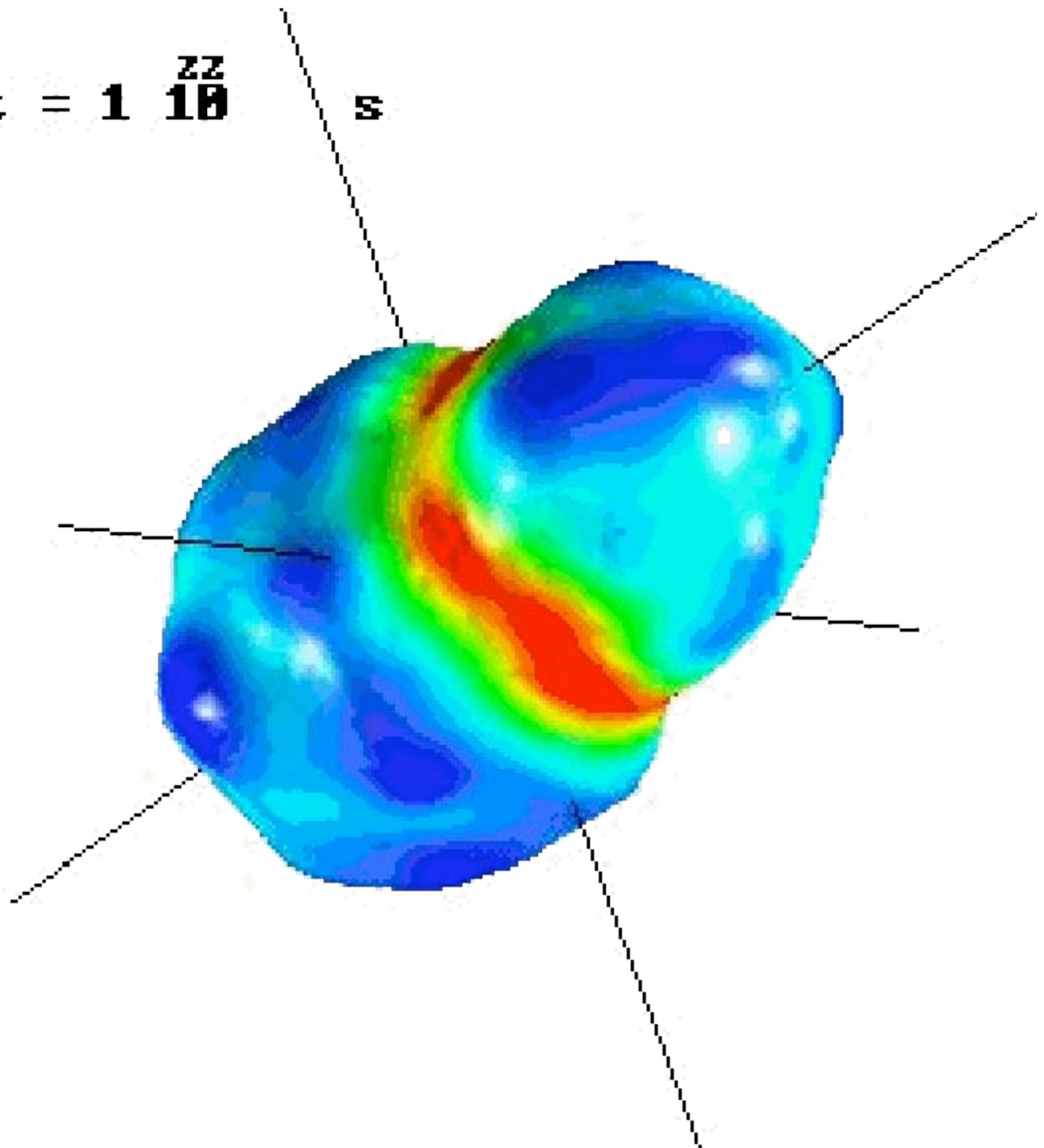


$t = 0$



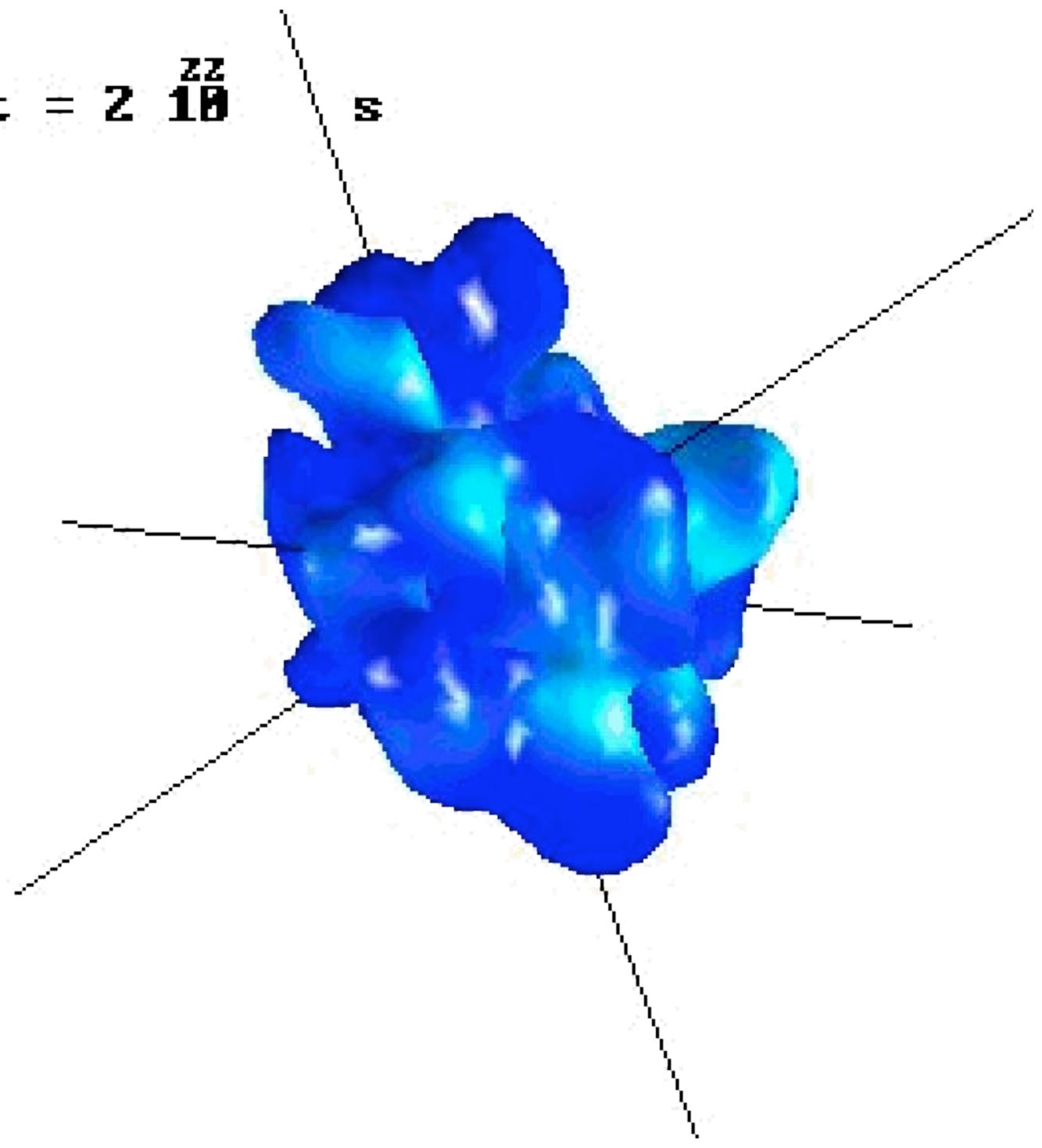
$t = 1 \frac{zz}{10}$

$s$



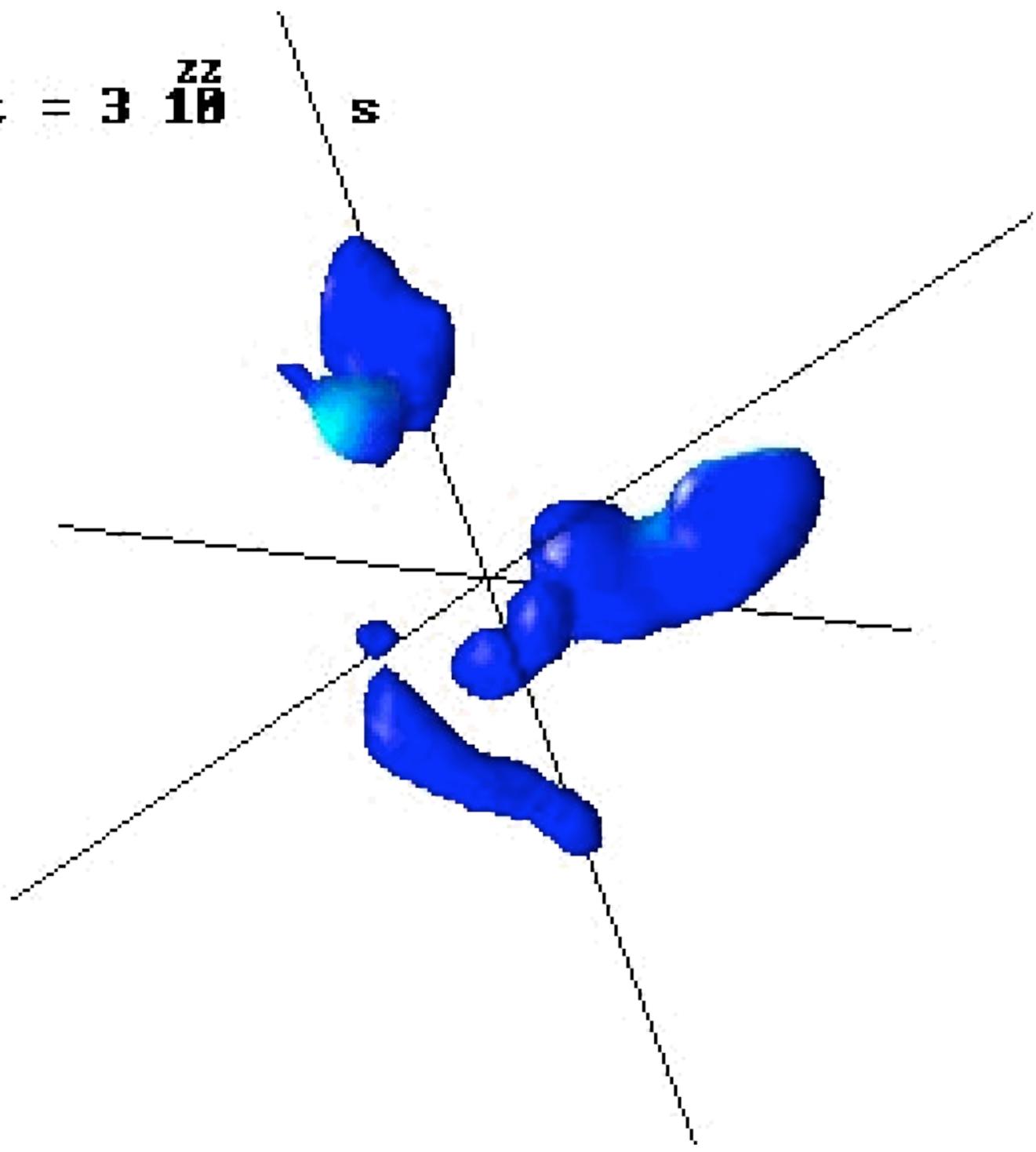
**t = 2 <sup>zz</sup> 10**

**s**

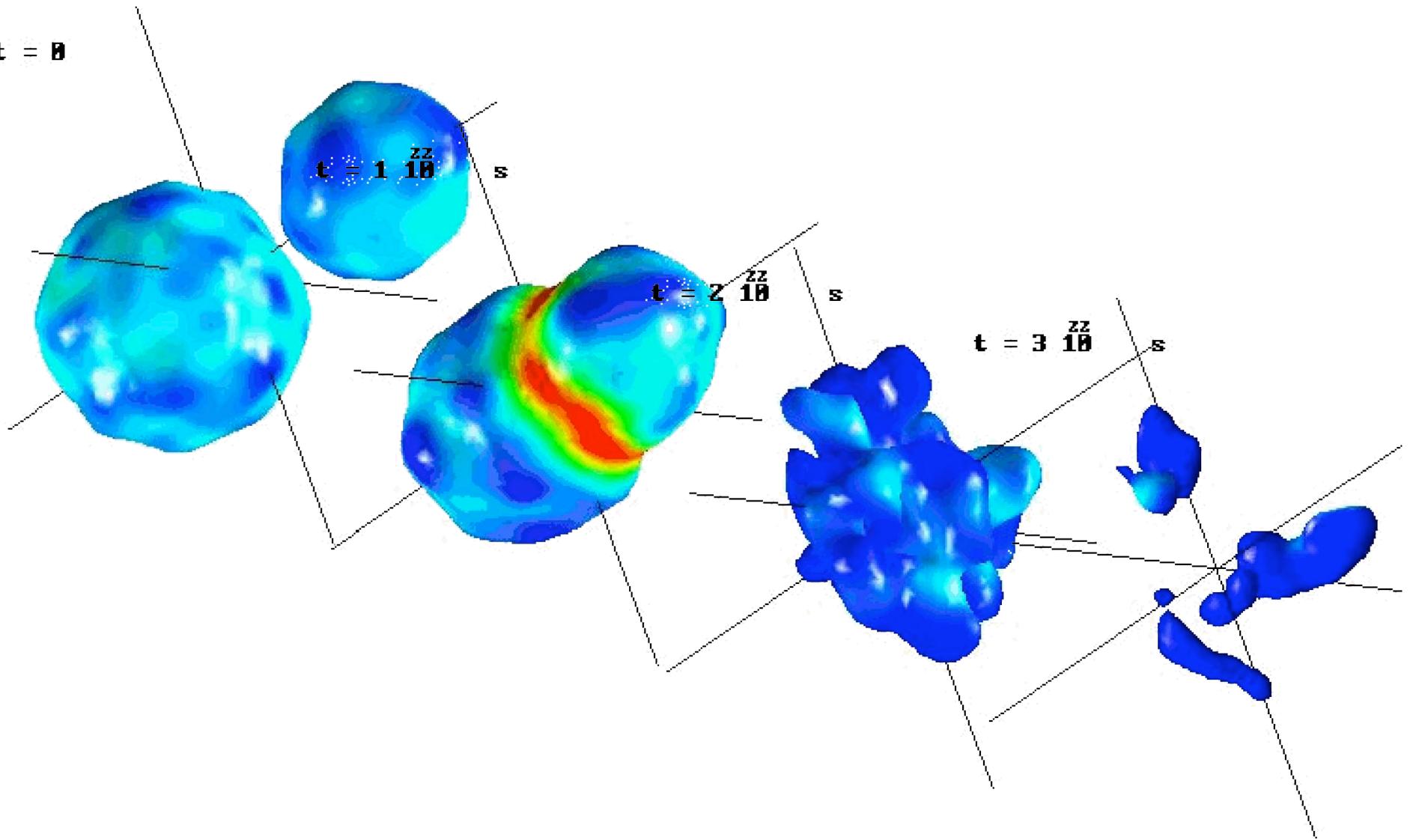


$t = 3 \frac{zz}{10}$

$\mathcal{E}$



$t = 0$



$t = 1$

$t = 2$

$t = 3$

s

s

s

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$t = 1 \text{ } 10^{-22} \text{ s}$

$t = 2 \text{ } 10^{-22} \text{ s}$

$t = 3 \text{ } 10^{-22} \text{ s}$

