



THE HENRYK NIEWODNICZAŃSKI  
INSTITUTE OF NUCLEAR PHYSICS  
POLISH ACADEMY OF SCIENCES

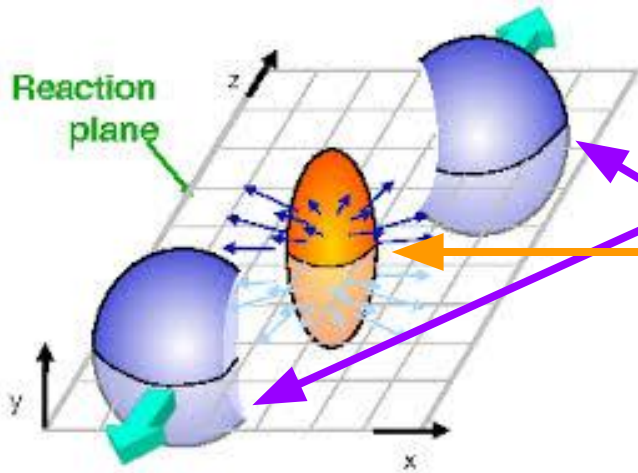
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DIVISION OF NUCLEAR PHYSICS AND STRONG INTERACTIONS  
DEPARTMENT OF THE THEORY  
OF STRONG INTERACTIONS AND MANY BODY SYSTEMS (NZ21)

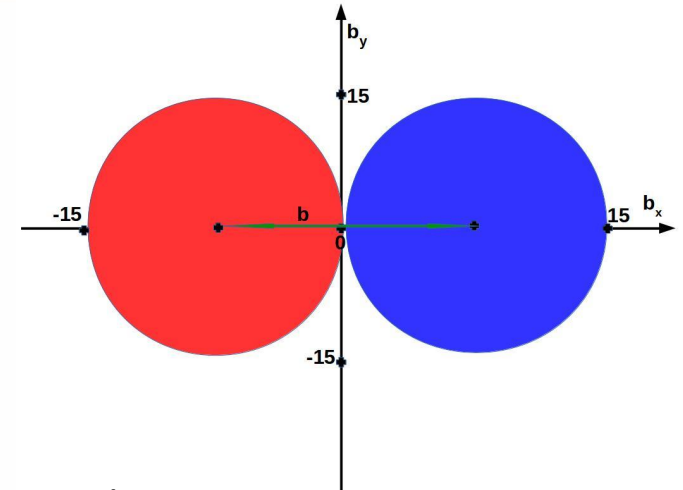
**TITLE: Time-space evolution of the  
spectator in ultra-relativistic  
heavy-ion collisions**

KRAKÓW, JULY 5, 2021

DR HAB. KATARZYNA MAZUREK

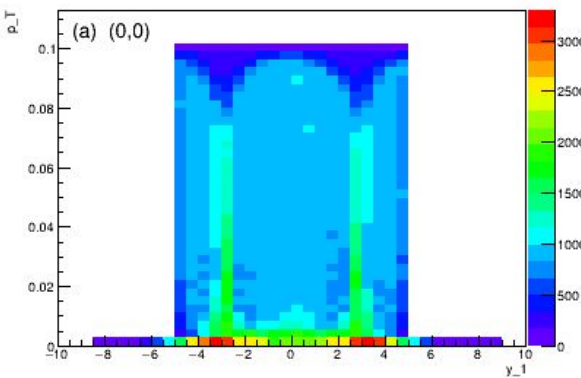


Estimate:  
 - mass and energy of **spectators**  
 - **QGP**; interactions with pions, muons and electrons

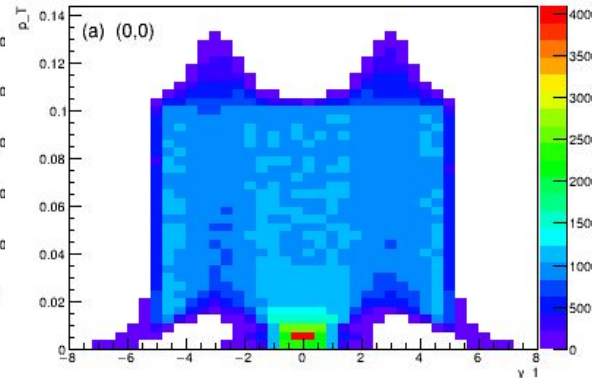


Impact parameter space  
**UltraPeripheral Collision (UPC)**

The electromagnetic interaction between charged particles and the spectator changes the initial trajectory of these particles.



**electrons**



**positrons**

