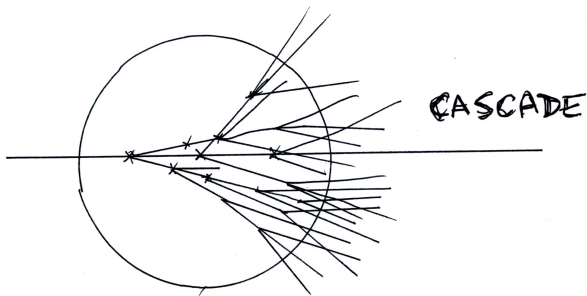


# WOUNDED NUCLEONS, WOUNDED QUARKS: A PERSONAL STORY

**A.Bialas, Cracow**

- 1. FORMATION ZONE**
- 2. WOUNDED NUCLEONS**
- 3. WOUNDED QUARKS**
- 4. ASYMMETRIC EMISSION**
- 5. LESSONS**

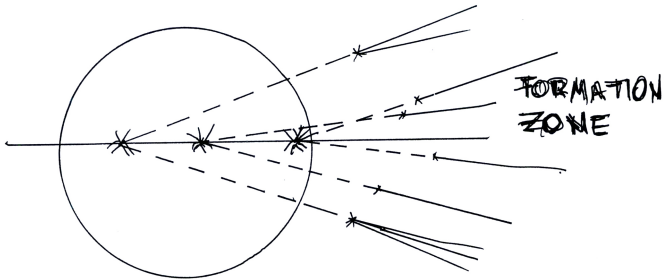
# INTRA-NUCLEAR CASCADE?



$$N(\nu) \sim [N(1)]^\nu$$

# MIESOWICZ(LANDAU): FORMATION ZONE

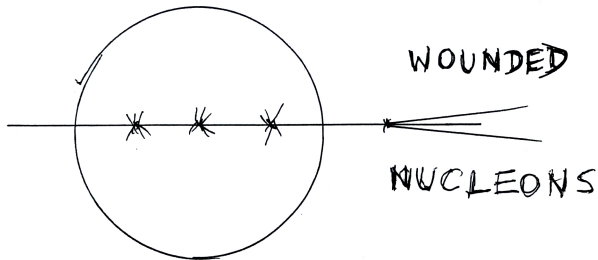
$$L = \gamma / m_{\perp} = E / m_{\perp}^2$$



$$N(v) = v N(1)$$

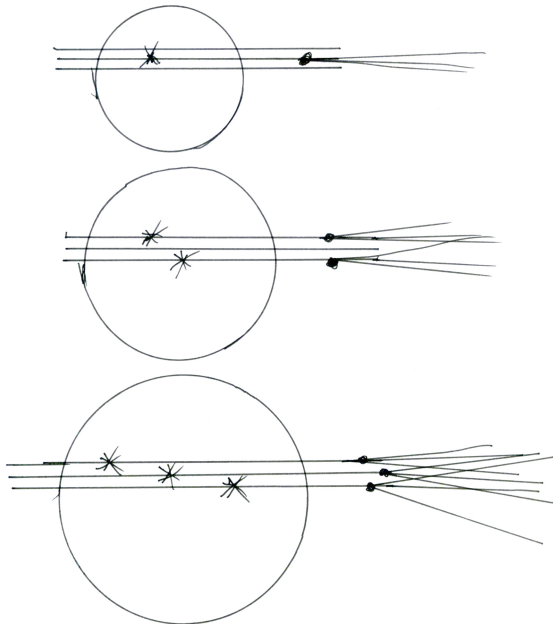
## WOUNDED NUCLEONS (1975-6)

$$\text{BUSZA: } N(\nu) = \frac{\nu+1}{2} N(1)$$



$$N(\nu) = (\nu+1) N_w$$

# WOUNDED QUARKS (1977)



# THE MUNICH PAPER (1982)

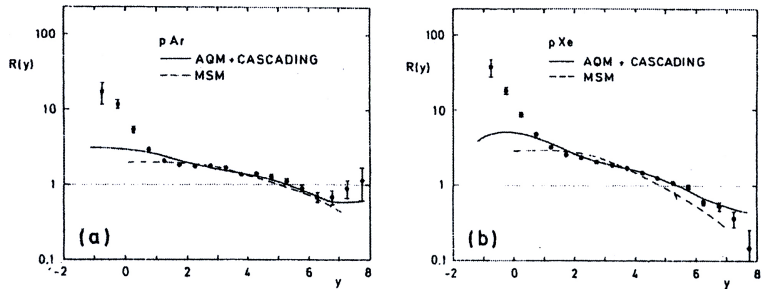


Figure:

# THE PHOBOS PAPER (2005)

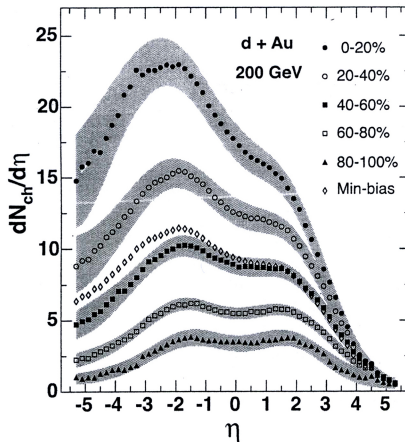
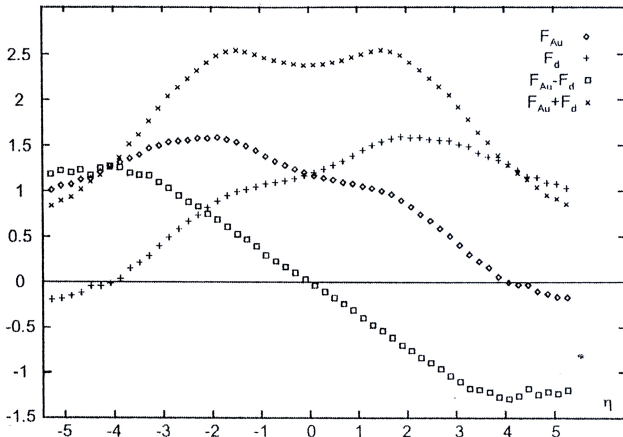


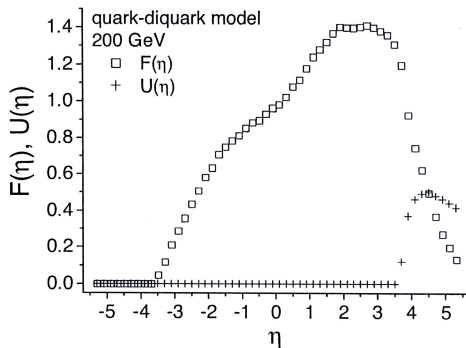
Figure: Pseudo-rapidity distribution in d-Au at  $\sqrt{s}=200\text{GeV}$

# W.CZYZ and AB: ASYMMETRIC EMISSION (2005)

## EMISSION FROM THE WOUNDED NUCLEONS DATA FROM PHOBOS

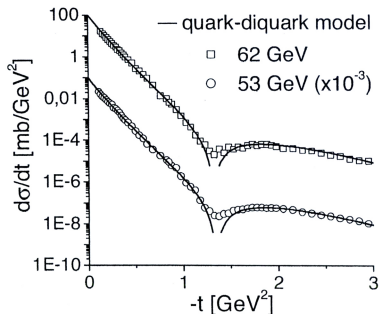
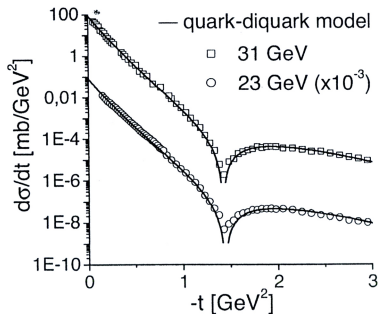


## EMISSION FROM A SINGLE QUARK/DIQUARK



# QUARK+DIQUARK: SPIN-OFF

## ELASTIC P-P SCATTERING IN THE QUARK-DIQUARK MODEL



# LESSONS

1. THE PERSONAL STORY CAME TO THE END **but**  
THE HISTORY CONTINUES: THE MODEL STILL ALIVE
2. CONCEPTS ARE MORE IMPORTANT THAN DETAILS
3. PROTON-NUCLEUS **vs** NUCLEUS-NUCLEUS :  
PROBLEM OF THE QUARK-GLUON PLASMA
4. SLOWLY CRAWLING ANTS:  
INTELLIGENT APPROXIMATIONS ARE CRUCIAL!
5. HUMAN BRAIN DOES NOT TAKE THE SHORTEST  
PATH