# Discussion :

# Probing correlations via "direct" reactions
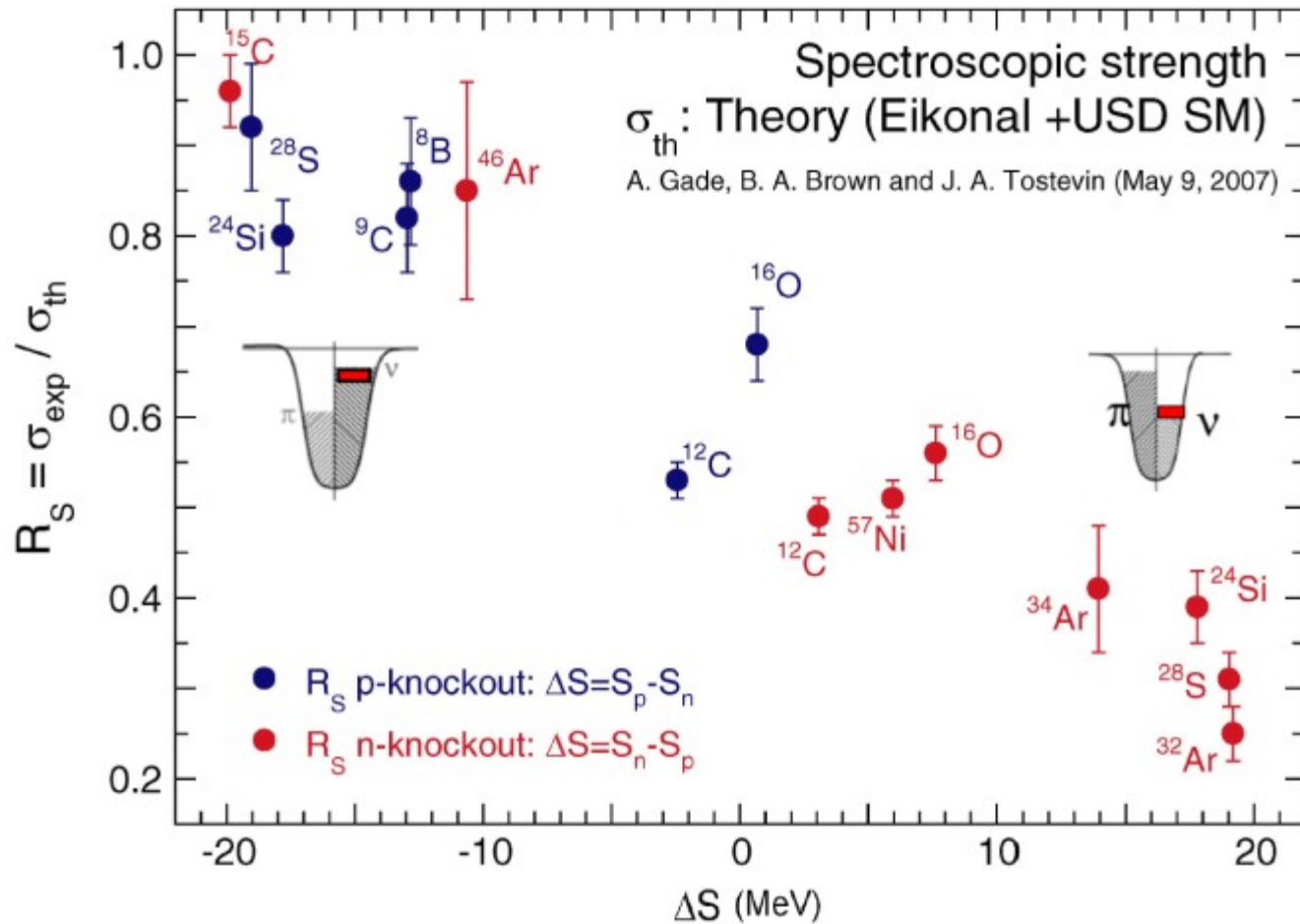
Freddy Flavigny [1,2],

[1] IKS - KU Leuven, Belgium
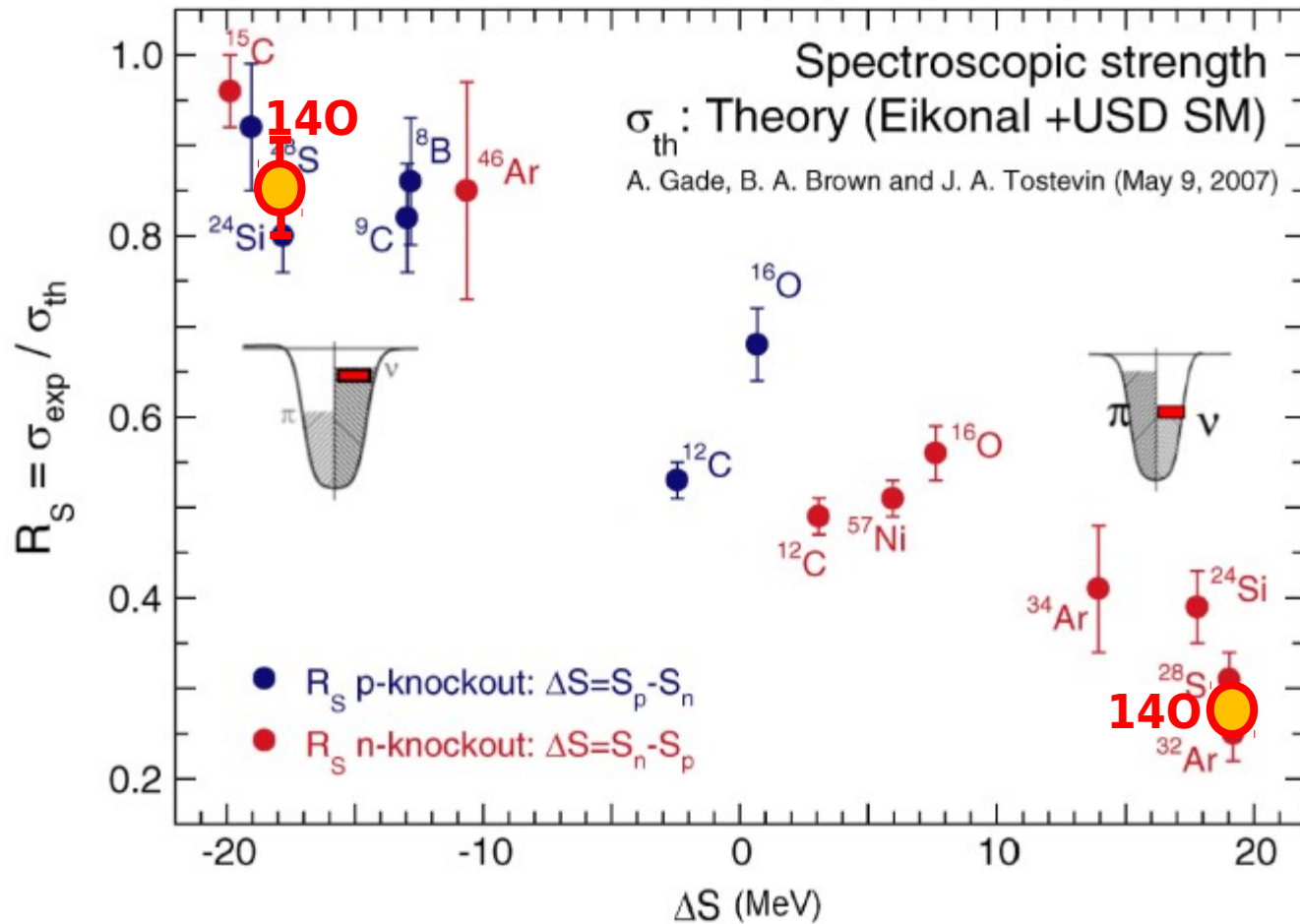[2] SPhN, CEA Saclay, France

# Probing correlations via "direct" reactions



A. Gade *et al*, PRL. **93** 042501 (2004); PRC **77**, 044306 (2008)

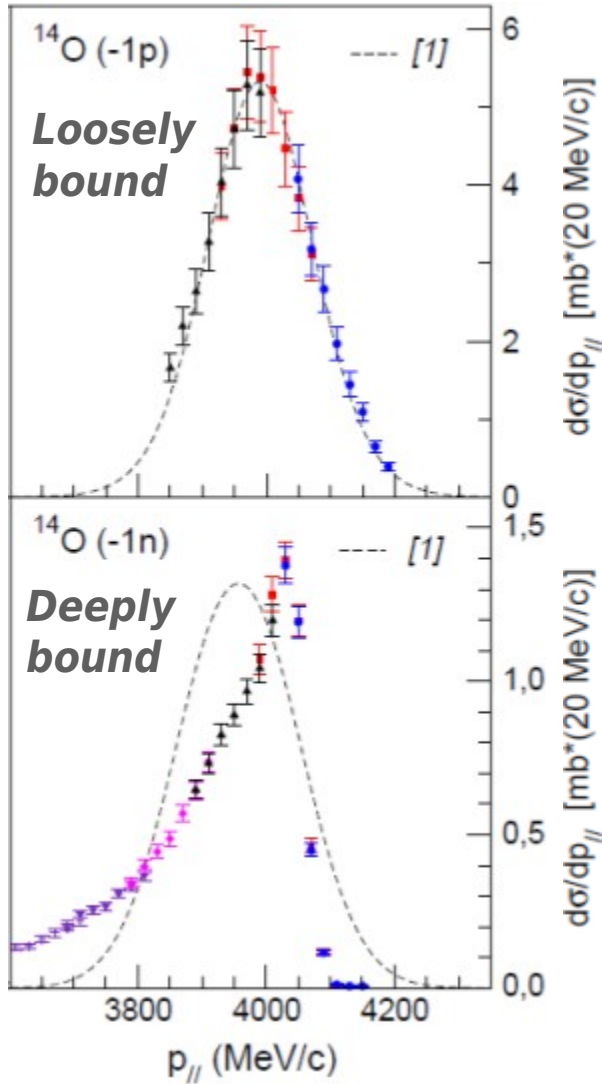# Probing correlations via "direct" reactions

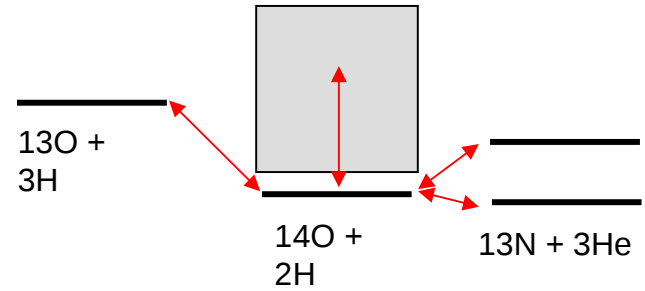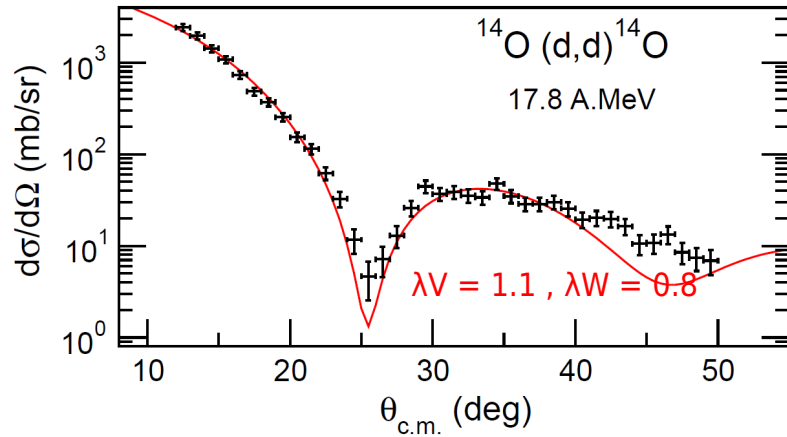A. Gade *et al*, PRL. **93** 042501 (2004) ; PRC **77**, 044306 (2008)



14O at 53 MeV/nucleon

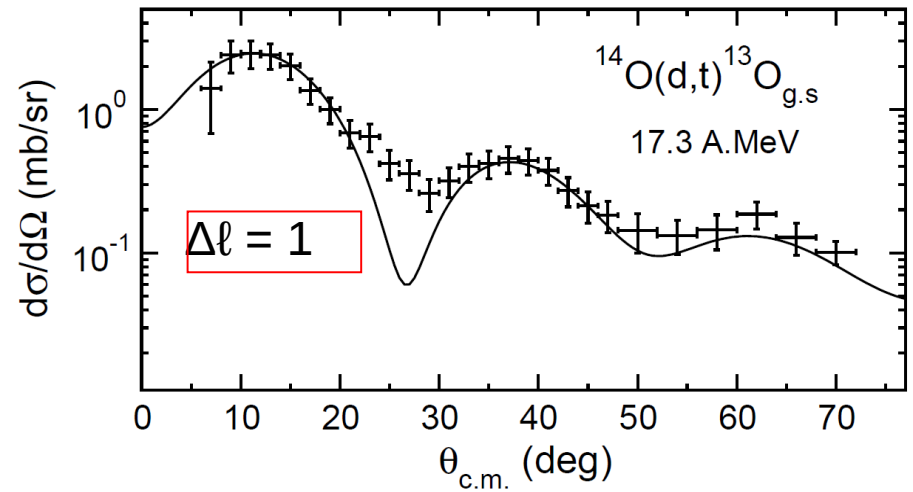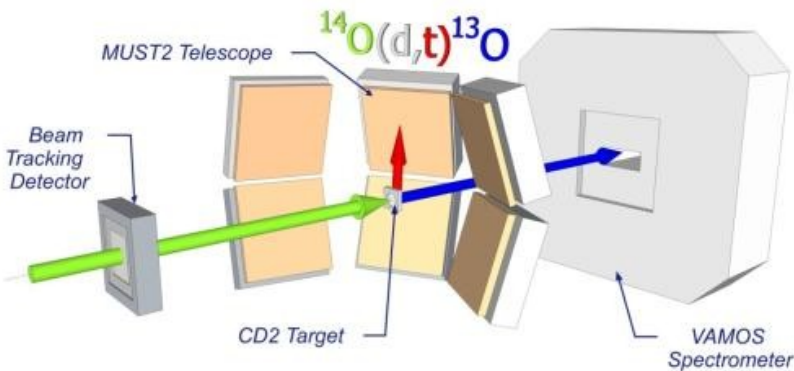# Probing correlations via "direct" reactions

[F. Flavigny *et al.,* Phys. Rev. Lett. **108,** 252501 (2012)]
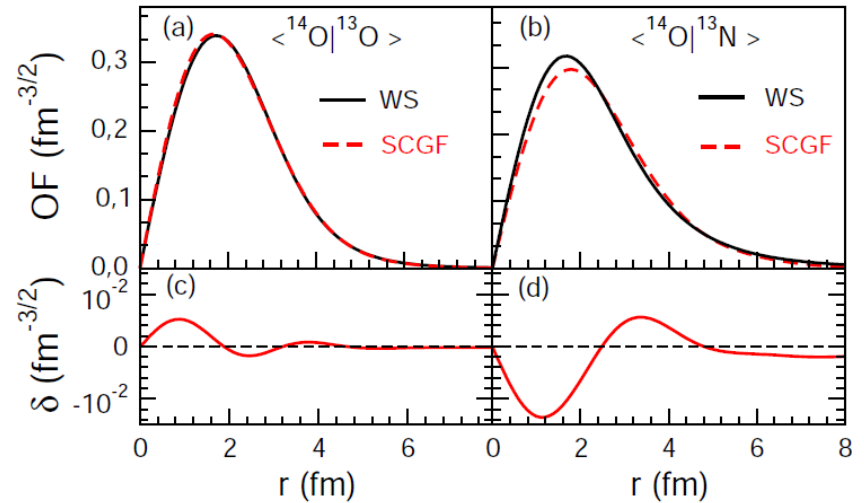
# Probing correlations via "direct" reactions



$^{14}O (d,d)^{14}O$

17.8 A.MeV

$\lambda V = 1.1$ , $\lambda W = 0.8$

$d\sigma/d\Omega$ (mb/sr)

$\theta_{c.m.}$ (deg)

13O + 3H

14O + 2H

13N + 3He

14O + d à 18 MeV/nucléon, SPIRAL

MUST2 Telescope

$^{14}O(d,t)^{13}O$

Beam Tracking Detector

CD2 Target

VAMOS Spectrometer

$^{14}O(d,t)^{13}O_{g.s}$

17.3 A.MeV

$\Delta\ell = 1$

$d\sigma/d\Omega$ (mb/sr)

$\theta_{c.m.}$ (deg)

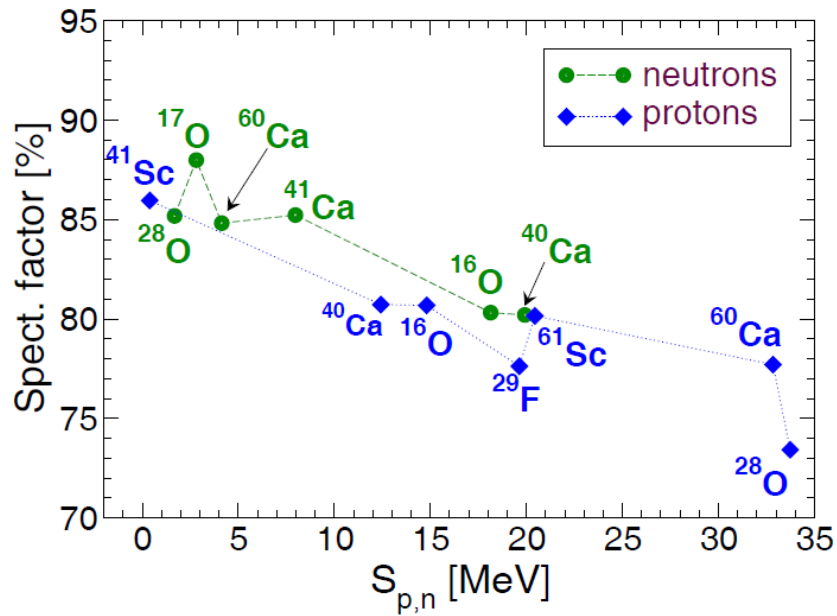# Probing correlations via "direct" reactions

WS form factors:

$R_s = \alpha \, \Delta S + \beta \quad \rightarrow \quad \alpha = +0.0004(24)(12)$
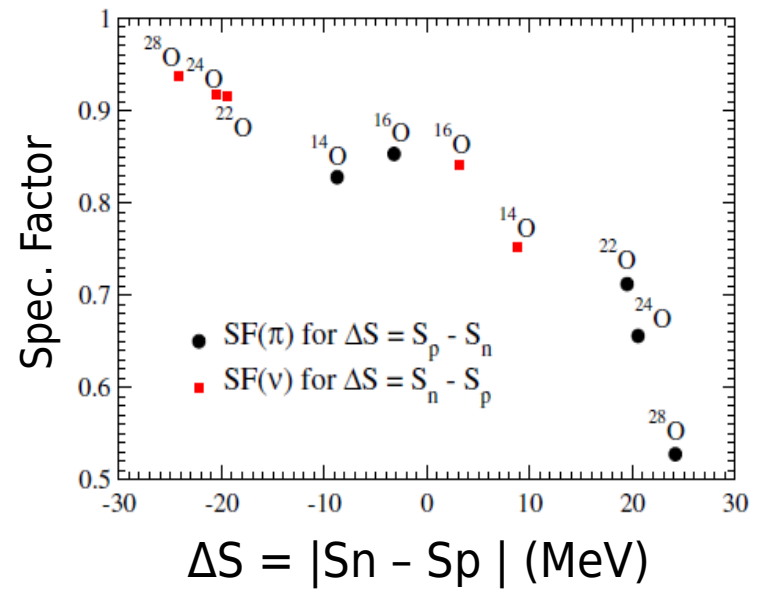


Ab-initio overlaps:

$R_s = \alpha \, \Delta S + \beta \quad \rightarrow \quad \alpha = -0.0042(28)(36)$

# Probing correlations via "direct" reactions



[C. Barbieri, W.H. Dickhoff, Int. Jour. Mod. Phys. A **24**, 2060 (2009)]

[O. Jensen, G.Hagen et al., PRL **107**, 032501 (2012)]

$\alpha \sim -0.004$ MeV$^{-1}$

$\alpha \sim -0.007$ MeV$^{-1}$