



# Dr Frédéric SARAZIN

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Colorado School of Mines  
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## Higher Education:

ISMRA/Ensi de Caen (France)	Instrumentation & Electronics	Engineer 1996
University of Caen (France)	Subatomic Physics	Master 1996
GANIL/University of Caen (France)	Subatomic Physics	PhD 1999

**Title:** "The N=28 shell closure: shape coexistence and spin-orbit contribution"  
under the supervision of Dr. W.Mittig.

## Appointments:

Research Fellow	University of Edinburgh (UK)	1999-2001
Research Fellow	TRIUMF Nat. Laboratory (Canada)	2002-2003
Assistant Professor	Department of Physics Colorado School of Mines	2003 to Present

## Research Interests:

- Low-energy nuclear structure / astrophysics – ISAC, HRIBF, GANIL
- Astroparticles – Nu-SNS, Pierre Auger Observatory

## Membership / Conference and Committee Duties:

Member of the American Physical Society (APS)  
Member of the TRIUMF User Executive Committee (TUEC) 2005-present  
Member of the organizing committee / session chair "Physique en Herbe" Caen, France 1997  
Member of the Astrophysics end-station for the Rare Isotope Accelerator (ARIA) working group  
Session chair "Techniques and Applications of Nuclear Physics" APS Denver April 2004 meeting

## Principal Investigator:

3 accepted / 1 submitted (pending) proposals at ISAC/TRIUMF  
1 submitted (pending) proposal at Oak Ridge National Laboratory.

## Close Collaborators (last 4 years) [selected]:

J.S.Al-Khalili	University of Surrey	UK
G.C.Ball	TRIUMF	Canada
J.Blackmon	ORNL	US
L.Buchmann	TRIUMF	Canada
B.R.Fulton	University of York	UK
P.E.Garrett	University of Guelph	Canada
G.Hackman	TRIUMF	Canada
C.E.Svensson	University of Guelph	Canada
A.C.Shotter	TRIUMF/Univ. of Edinburgh	Canada/UK
J.L.Wood	Georgia Tech	US

## Selected Publications:

1. "Shape coexistence and the N=28 shell closure far from stability"  
**Phys. Rev. Lett. 84 (2000) 5062**  
F.Sarazin, H.Savajols, W.Mittig, F.Nowacki, N.A.Orr, Z.Ren, P.Roussel-Chomaz, G.Auger, D.Baiborodin, A.V.Belozorov, C.Borcea, E.Caurier, Z.Dlouhy, A.Gillibert, A.S.Lalleman, M.Lewitowicz, S.M.Lukyanov, F.De Oliveira, Y.E.Penionzhkevich, D.Ridakas, H.Sakurai, O.Tarasov, A.de Vismes
2. "The halo structure of  $^{14}\text{Be}$ "  
**Phys. Rev. Lett. 86 (2001) 600**  
M.Labiche, N.A.Orr, F.M.Marques, J.C.Angelique, L.Axelsson, B.Benoit, U.C.Bergmann, M.J.G.Borge, W.N.Catford, S.P.G.Chappell, N.M.Clarke, G.Costa, N.Curtis, A.D'Arrigo, E.de Goes Brennand, O.Dorvaux, G.Fazio, M.Freer, B.R.Fulton, G.Giardina, S.Grevy, D.Guillemaud-Mueller, F.Hanappe, B.Heusch, K.L.Jones, B.Jonson, C.LeBrun, S.Leenhardt, M.Lewitowicz, M.J.Lopez, K.Markenroth, A.C.Mueller, T.Nilsson, A.Ninane, G.Nyman, F.de Oliveira, I.Piqueras, K.Riisager, M.G.Saint Laurent, F.Sarazin, S.M.Singer, O.Sorlin, L.Stuttge
3. "Detection of Neutron Clusters"  
**Phys. Rev. C65 (2002) 044006**  
F.M.Marques, M.Labiche, N.A.Orr, J.C.Angelique, L.Axelsson, B.Benoit, U.C.Bergmann, M.J.G.Borge, W.N.Catford, S.P.G.Chappell, N.M.Clarke, G.Costa, N.Curtis, A.D'Arrigo, E.de Goes Brennand, F.de Oliveira-Santos, O.Dorvaux, G.Fazio, M.Freer, B.R.Fulton, G.Giardina, S.Grevy, D.Guillemaud-Mueller, F.Hanappe, B.Heusch, B.Jonson, C.LeBrun, S.Leenhardt, M.Lewitowicz, M.J.Lopez, K.Markenroth, A.C.Mueller, T.Nilsson, A.Ninane, G.Nyman, I.Piqueras, K.Riisager, M.G.Saint Laurent, F.Sarazin, S.M.Singer, O.Sorlin, L.Stuttge
4. "Strong Resonances in Elastic Scattering of Radioactive  $^{21}\text{Na}$  on Protons"  
**Phys. Rev. C65 (2002) 042801**  
C.Ruiz, F.Sarazin, L.Buchmann, T.Davinson, R.E.Azuma, A.A.Chen, B.R.Fulton, D.Groombridge, L.Ling, A.Murphy, J.Pearson, I.Roberts, A.Robinson, A.C.Shotter, P.Walden, P.J.Woods
5. "(3He,p) as an alternative to resonant elastic scattering"  
**Nucl. Phys. A718 (2003) 556c**  
F.Sarazin, L.Buchmann and the TUDA Collaboration
6. "Halo Neutrons and the  $\beta$ -decay of  $^{11}\text{Li}$ "  
**Phys. Rev. C70 (2004) 031302**  
F.Sarazin, J.S.Al-Khalili, G.C.Ball, G.Hackman, P.M.Walker, R.A.E.Austin, B.Eshpeter, P.Finlay, P.E.Garrett, G.F.Grinyer, K.A.Koopmans, W.D.Kulp, J.R.Leslie, D.Melconian, C.J.Osborne, M.A.Schumaker, H.C.Scraggs, J.Schwarzenberg, M.B.Smith, C.E.Svensson, J.C.Waddington, and J.L.Wood
7. "TIGRESS Highly Segmented High-Purity Germanium Clover Detector"  
**Nucl. Instr. Meth. A543 (2005) 431**  
H.C.Scraggs, C.J.Pearson, G.Hackman, M.B.Smith, R.A.E.Austin, G.C.Ball, A.J.Boston, P.Bricault, R.Churchman, N.Cowan, G.Cronkhite, E.S.Cunningham, T.E.Drake, P.Finlay, P.E.Garrett, G.F.Grinyer, B.Hyland, B.Jones, J.R.Leslie, J.-P.Martin, D.Morris, A.C.Morton, A.A.Philips, S.C.Ravuri, F.Sarazin, M.A.Schumaker, C.E.Svensson, J.J.Valiente-Dobon, J.C.Waddington, L.Watters, L.Zimmerman
8. "Multichannel R-Matrix Analysis of Elastic and Inelastic Resonances in the  $^{21}\text{Na}+p$  compound system"  
**Phys. Rev. C71 (2005) 025802**  
C.Ruiz, T.Davinson, F.Sarazin, I.Roberts, A.Robinson, P.J.Woods, L.Buchmann, A.C.Shotter, P.Walden, N.M.Clarke, A.A.Chen, B.R.Fulton, D.Groombridge, J.Pearson, A.S.Murphy