Q VALUE - CHANGE IN ENERGY

SPIN AND PARITY

RESONANCE REGION RULES - ISOTOPE DEPENDANT RESONANCE REGIONS

POTTASIUM N,P

INFORM RESONANCE REGION in regions where we do not have information

training datasets - density of resonances meaning widths and number will depend on physical parameteres, neutron number and proton number odd or even,

if both odd density is high, if both even much lower, if oppsite intermediate.

Promiscuity - valence protons \* valence neutrons / (sum) nearest magic number (difference)

all behaviour scales scale like the number of valence particles

when that number crosses four the nuclues is deformed

magic numbers

if the p factor is about the same we can separate and make them a dataset

other nuclei with similar p factor with

resonance region will behave like deviation from magic numbers

are they in the same shell? what shell are the protons and neutrons are?

fluorine, similar values if i am in the same position relative to the shell gap

neutron separation energies (lithium does not apply why?)

average width of the resonances

all neutron separation energies arre within in 6 - 9 MeV

For capture q is only s(n)

energy up to the first excited state in the target because then inelastic

if 10 resonances between

resonances have a bright wigner form

100 to

why is it flat previous to measurments, go into desition tree.

you capture 100 kv (sn) in some other nuclide you capture a thermal n eutorn and have the same energy. Put Excitation Energy in the compound nucleus which is S(n) plus the neutron energy (sn is for the target nucleui)

we lack data and we never going to measure data

distribution of resonances arent random, they follow specific distributions

purposufly blind the code so that is not looking

we limit its dataset and look at predictive capabilities

regularization

dropout

constratints

benchmark coupled with neural networks

runs it through advance adversarial networks

look for hidden symmetries, go into decition tree.

Meeting with rapids and fastmath.

WANDA (o)

pattrick toulu (lanl)

rapportour

int workshop