Re: Lie group F4 = Aut(OP2)

Source: http://sci.tech−archive.net/Archive/sci.math.research/2006−02/msg00049.html

---

- *From*: Marek Mitros <marekmit@xxxxxxxxxxxx>
- *Date*: Fri, 10 Feb 2006 15:05:00 EST

> Indeed (non−)associativity spoils the conventional
> technique of using
> equivalence classes of scale invariant coordinates to
> construct OP^2.
> Instead one defines OP^2 using the exceptional Jordan
> algebra J(3,O),
> where points of OP^2 consist of those matrices of
> J(3,O) with vanishing
> Freudenthal product (A x A = 0).

(...)

Thank you for this answer. However it is not enough for me. This definition is not intuitive enough, not geometrical enough for me. I would like to imagine how the OP2 looks.
Do you know any analogy of the Jordan algebra and OP2 to quaternions ?

I don't have enough time to investigate how the non−associativity spoil the octonionic planes in O2 and O3. Let (x,y) belong to O2. Define plane [x,y] as the one generated by vectors (x,y), (e1x,e1y),...(e7x,e7y) where e1...e7 are base octonion. The problem is whether (e2e1x, e2e1y) belongs to [x,y] ? I would like to see example when it doesn't.

Regards,
M.M.

.