Re: Repulsion binds atoms

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- *From*: "Ken S. Tucker" <dynamics@xxxxxxxxxxx>

- *Date*: 19 Jun 2006 11:10:35 −0700

Edward Green wrote:

> Ken S. Tucker wrote:
>
> ....
>
> > Anyway without studying the
> > actual authors article it's less than precise to
> > get to deep into what they've done, aside from
> > something (maybe) akin to Cooper pairing.
>
> In the absence of further evidence, I'm sticking to my guns: the
> situations are analogous, in that particules which would repel in
> isolation ride a locus of the system potential where they attract
> (lower potential energy by approaching). The details appear to differ:
> not the least because we have atoms vs. electrons, but also because the
> electrons pair over many lattice spacings, while the atoms seem to pair
> in single lattice troughs.
>
> I have some funny ideas about "force", BTW, though I'm not trying to
> develop them here.

Ok, so did AE.

> > I can't resist an analogy: Say persons A and B dislike each
> other, and
> > can't stay far enough away. However, they move in the same
> social
> > circles, and have common friends, and neither can turn down
> an
> > invitation to a party. In fact, each is almost certain to accept
> an
> > invitation to a party knowing the opposite individual was
> invited, lest
> > that one have a free field to gossip about him. Because of

> their
> environment, although in society free space their interaction would be
> purely repulsive, they paradoxically seem to form a bound pair in the
> party lattice.

Well a pair of protons in a nucleus is also strange,
if the strong nuclear force is not understood.

Interesting. How does that fit in our scheme of "pairwise repulsion, attraction when part of a more complex system"? I'm first inclined to think the strong nuclear force is just another force, which happens to overcome the electrostatic force at short range, but then I recall that a pair of protons, AFAIK, is not stable, but has to be aided by at least one, or maybe preferably two neutrons.

The mention of SNR was a response to an analogy.

> Come to think of it, no author worth his salt would describe such a
> situation without dwelling on the delicious irony of how their mutual
> repulsion was converted into pair formation by the social environment
> −− so maybe I should be more forgiving. ;−) I was involved in a
> situation like that at work, where I was forced to work with a guy who
> was a duplicitous <expletives deleted>, I think in part because
> management knew I couldn't stand him.

I've been lucky to get−along with everyone I've
worked with, I've fired a few, but that was due
to unsuitability. It's institutions that evolve
policies that are "duplicitous" so I've fired my
share of institutions.

I agree with you about institutions, although I'm not sure that there are "good" institutions and "bad" institutions. Institutions all evolve towards environments rewarding dishonest and self−serving behavior, though perhaps differ to the degree which they have slid down that hole at any given moment, and to the strength of local countervailing forces. Nobody has yet figured out how substitute an

> anarchic economy of free agents for everything which in contemporary
> society is handled by some institution or other, so it seems we're
> stuck with them, for now. Obviously they have some strengths too.

I grew up in ontario, where the corruption
is so bad the professionals left in droves
for the USA that was called the "brain drain"
and now ontario has an effective IQ of 90−80.
That's likely irreversible, rather like many
flourishing societies like ancient Egypt
adopted a retarded culture, and entered
a corrupt dark age, from which they have yet
to recover. A "fake democracy" that canada
has is not sustainable, but canadians
themselves − vetted of their intelligence − are
educated to that institution and unable to
hold the governments accountable, hence
the government becomes self−serving.
That's simple Byzantium Social Dynamics.

> > I'm not sure how your no−dipole explanation figures: how do
> two like
> charges in free space manage to increase their separation,
> radiating
> (emitting photons) in the process?

> It's quite clear a pair charges moving as,
>
> (−) −−−−>−−−−<−−−−(+)
>
> has a net current required for the production of
> an EM−wave. However a pair of LIKE charges
> moving as,
>
> <−−−−(−)−−−−−−−−(−)−−−−>
>
> has no net current, and hence current change,
> and thereon to no magnetic field change, so I
> don't know how to make that pair radiate.

> Yet I think you must concur with me that two postive charges held close
> together and then released would, first of all, accelerate, and
> presumably radiate. Though I speak in slogans, with no real
> understanding. I hazard a guess though that you are using rules of
> thumb which don't apply here: for example, when you say "no net
> current", averaging over all of space, maybe that isn't the thing to do
> here. If we divide space by a plane between the charges, we have an

> electron current in the right hand space towards the right, and in the
> left hand space towards the left, both increasing in time.

I rather think QED as well as classical EM can handle this.

> But then you would want to ask about
> "Electron Beam Lithography" or "Electron
> Microscopes". I haven't found evidence
> a pair of free electrons will radiate,

> I don't follow you. Are you saying there is no radiation in these
> devices associated with the spreading of the electron beams?

Yes, the radiation is nil, justas the radiation
of a current path in Super Conductor is nil.
Regards
Ken S. Tucker

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