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Replacing van der Waals Forces with the Charge Field



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Van der Waals forces were originally proposed to correct the ideal gas laws, when it was recognized they were ideal and didn't fit much real data. [I have shown recently](#) that the ideal gas laws were fudged to match data at standard temperature and pressure (STP), so of course to match a wider range of temperatures, they would have to be fudged in many other ways. This is where we get Keesom forces, Debye forces, the London dispersion force, and a host of other pushes and finesses in math and theory. Before I begin to show how to replace this mess with a real mechanical theory, I will take a few moments to remind you how awful the current state of these theories really is.

These forces are called intermolecular forces, and they represent attractions or repulsions between molecules other than covalent bonds, hydrogen bonds, or electrostatic forces between ions. I have already shown that can't be right, since what we need to correct the old gas laws is the ever-present charge field, not more talk of intermolecular forces. Since none of the van der Waals forces bring the charge field into the equations, we know they are misdefined from the beginning, without further study. But I will analyze them anyway.

As usual, I will start my analysis by looking at the encyclopedia entries. Wikipedia tells us in the introductory section that van der Waals forces were first measured directly in 2012. That is meant to convince you that they have been confirmed. But it doesn't convince me. What it convinces me is that these forces were just a bald hypothesis for many decades, existing only as a hole filler, and that they still have almost no confirmation. One measurement last year should not be enough to prove such a longstanding theory, especially when we remember the state of physics in 2012. I have shown in dozens of papers that they are now claiming to have measured all sorts of things "directly" that they haven't really measured directly, so I tend to take such claims with a grain of salt. Such measurements—even when they do turn out to be more or less "direct"—always turn out to be open to a wide range of interpretations, and current physics simply interprets everything to match standing theories. They do this while ignoring all other possibilities, even or especially possibilities that are much more possible. Even though much of new physics is statistical, they always forget to apply probabilities to their confirmations, by asking themselves if the standing interpretation is the most probable match to the new direct measurement. They can't do that, of course, because they *need* confirmation of these old

theories. They prepare these experiments expressly to confirm old theories and do everything they can to push the experiments toward those confirmations, so it is no surprise when all new experiments confirm existing theories.

But back to the basics (from Wikipedia):

Intermolecular forces have four major contributions:

1. A repulsive component resulting from the Pauli Exclusion Principle that prevents the collapse of molecules.
2. Attractive or repulsive electrostatic interactions between permanent charges (in the case of molecular ions), dipoles (in the case of molecules without inversion center), quadrupoles (all molecules with symmetry lower than cubic), and in general between permanent multipoles. The electrostatic interaction is sometimes called the Keesom interaction or Keesom force after Willem Hendrik Keesom.
3. Induction (also known as polarization), which is the attractive interaction between a permanent multipole on one molecule with an induced multipole on another. This interaction is sometimes called Debye force after Peter J.W. Debye.
4. Dispersion (usually named after Fritz London), which is the attractive interaction between any pair of molecules, including non-polar atoms, arising from the interactions of instantaneous multipoles.

Let's look quickly at each of those. We have never been told exactly how the Pauli Exclusion Principle prevents the collapse of molecules. The PEP simply tells us that electrons cannot occupy the same quantum state. It does not tell us that electron orbitals are inviolate or incollapsible. Ask yourself what exclusion really has to do with collapsibility. Say that two electrons *could* inhabit the same quantum state. Wouldn't that just make the double orbital twice as strong? Collapsibility has nothing to do with electron exclusion. They are trying to imply that molecules don't crash into one another because the electrons keep them apart. But the PEP concerns electrons, not molecules. The PEP doesn't say anything about preventing the approach of a massive molecule. The approaching molecule isn't trying to enter the orbital position of an electron, is it? And if it were, how could one tiny electron keep it from doing so? The theory makes no sense from the first word. The electron simply doesn't have the energy to repel incoming molecules. Limited to its original definition, the PEP made *some* sense, because one electron can logically and mechanically exclude another electron from its position. But one electron cannot exclude a proton or an entire nucleus, much less another molecule. The old guys simply asserted it because they needed it, with no other justification. And no one called them on it.

As my readers know, it isn't tiny electrons that provide this molecular exclusion they are talking about. It is the recycled charge field. The nucleus is emitting a heavy charge field of real photons, and these photons repel large intruders like molecules. Two nuclei are held at a distance by charge field structures, and these structures are dependent on the nuclear structures present.

You see, all this van der Waals theory and math was built on top of old electron orbital theory, theory first used to explain bonding. So although it doesn't include covalent bonding, it is all a variation of that sort of bonding. But since I have shown that [electron orbital bonding was dead on arrival](#), contradicting its own field definitions, we know that van der Waals forces are all DOA for the same reason. Once electron bonding is gone, all theory after it is also gone. We have to rewrite the entire field, which is why I am here. Not only are there no electron bonds, there are no electron orbitals, no PEP, and no electron wavefunction. [I have already proved](#) that the wavefunction has to be given to the photons, not the electrons, so nothing will stand. Bohr's own equations prove this, since I caught him assigning variables to the electron that he had *already defined* as belonging to the photon. In making the switch to a photon field, some of the corrections are pretty simple, since we just make a one-step

transference from the electron to the photon. But most of them are somewhat more complex, since the new photon field doesn't act like the old electron field. It produces exactly the same data, but it does so with completely different mechanisms. Or I should say, mechanisms. The old electron fields had no real mechanisms, just pushes and fudges. My new theory has real mechanisms, ones that make sense at all points.

Now let us look at number 2, or the Keesom forces. I think anyone can see that these forces are trying to match my charge forces. When ions are involved, they pretty much admit this is a charge force. They call it "electrostatic," but that is imprecise. It isn't electrostatic, because electrostatic forces are part of the E/M field. I have shown that the charge field is actually Maxwell's displacement field, which *underlies* and drives the E/M field. So it is related, but not equivalent. Keesom forces are always charge forces, whether we are dealing with ions or not. The multipole interactions prove that, since what they are trying to do there is match the charge profile of my diagrammed nucleus, which is taking in charge at the poles and emitting it via the carousel level (see diagram of Argon below). This creates a sort of quadrupole. However, in current theory the multipole is not mechanically assigned, being used only as a heuristic device to match data. In my theory, we can dispense with the multipole completely, looking instead at the nuclear diagrams to understand the shape of the real emitted charge field. In my diagrams, you can *see* the multipole in each element and molecule and how it is being created. In many cases, that will give us not a quadrupole or octopole, but a hexapole.

As an example of *their* diagrams, we get this:



Floating field potentials and floating bonds, with no logical assignments. In my theory, that bond is created by the charge field. All elements in the molecules are recycling this real field of real photons, and the field is really traveling physically between the molecules. In current theory, the bond is just a dashed line. In my theory, the field potentials δ are caused by real charge field densities and directions. In current theory, they are caused by atomic dipoles, and the idea of atomic dipoles was always so ridiculous they gave up even trying to explain it with any mechanics. If you go to a textbook or Wikipedia, they now [divert you immediately into fudgy math](#), telling you first that a non-degenerate atom can have no dipole, and that any dipole must indicate a degenerate energy level (perhaps using a first-order Stark effect—but only if some of the electrons' wavefunctions have opposite parity). I recommend you not bother trying to understand that, since there is nothing to understand. It just means they have polar atoms in the diagram above because they *need* them. They can't explain Keesom forces any other way. But they have no real physics.

Now number 3, the Debye force. This is defined as an attraction between a permanent multipole on one molecule and an induced multipole on another. This force is not far wrong in some ways, except again in its field assignment. Once more, they explain the polar nature of the molecules in terms of electrons being attracted or repelled by ends of a molecule. This isn't the mechanism. The mechanism is again charge field structures. Molecules are more charge balanced than ions or even elements, but they still have field potentials. Current theory is correct in its explanation of *induced* poles, since one molecule can indeed induce field changes upon another molecule. But this is done through the already existing charge channels. These existing charge channels are natural outcomes of the nuclear structure, and cannot be induced past a certain point; but as we saw in bonding of elements, one element certainly can influence the structure of another. Even an external field can do that, as [we saw recently with](#)

Neodymium.

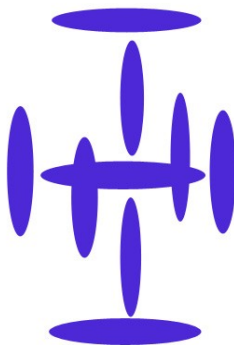
Finally, number 4, London dispersion forces. The LDF arise “from quantum-induced instantaneous polarization multipoles in molecules.” Just from that one sentence, we can already tell these forces are a fudge and nothing more. The LDF were thought to be necessary to explain molecules without permanent multipole moments. However, my diagrams show us there is no such thing. Since every element is polar, every molecule must be as well. But because they had no nuclear diagrams, and because they were basing everything on electron orbitals, they encountered examples that seemed to offer them no means to a solution. They therefore were forced to manufacture one, via the “correlated movement of electrons.”

To disprove London forces is pretty easy for me, since they tell us,

This is the only attractive intermolecular force present between neutral atoms (e.g., a noble gas). Without London forces, there would be no attractive force between noble gas atoms, and they wouldn't exist in liquid form.

So here is my diagram of Argon:

Argon



Each blue disk represents an alpha, or two protons and two neutrons. I have shown the noble gasses are nonreactive mainly because all those six outermost alphas are perpendicular to the external charge field. Since the nucleus naturally pulls in charge at the poles, those top and bottom alphas are the most important in this regard. They act like caps on the poles, preventing charge from being pulled in. Since these blue disks already represent field potentials, that should be easy to understand once you know what they are. Each blue disk is taken to be spinning, and it is recycling the charge field itself. It takes in charge at its center (which is its own pole) and emits all along the edge of the disk. Therefore, the top and bottom alphas are drawn so that their emitted charge is releasing in the x-y plane here. But since the nuclear pole is in the z plane, those two alphas aren't emitting into it. Rather than channeling charge, those cap alphas are mainly dispersing it sideways, you see.

But what does this mean for our current problem? It means that Argon is only relatively neutral, not completely neutral. It maintains a small polarity, only due to its configuration. Argon has a weak charge field, not a zero charge field. With a configuration like this, the only way Argon could have zero polarity is if it were channeling no charge. We know that isn't true, so we should expect Argon to have some polarity. The axis level will maintain some residual minus charge and the carousel level (the

four alphas surrounding the central alpha) will maintain the plus. But of course we will see this polarity only in experiments designed to see it. Other experiments will miss it, especially if they have been predisposed by electron bonding theory to miss it.

We now know this is true of the noble gasses, since we have recently manufactured compounds with them. If the noble gasses were completely nonpolar, they wouldn't have any working charge channels and couldn't be bonded in any circumstances.

So I hope you can now see that all the current problems as well as the solutions depend on the old models, which were tied to electron bonding theory and electron orbital tables. If we dump those tables and replace them with my nuclear diagrams, we get different solutions. And the reason we get different solutions is that we ask different questions. Many times, the mainstream has been forced into a fudge only because it was trying to match data to electron orbital models that weren't even true—as we saw with London dispersion forces. I have shown that noble gasses do have polarity, but because the electron orbitals told us they didn't, physicists and chemists had to come up with a pushed explanation. Although that pushed explanation made no theoretical sense, they kept it simply to fill the hole.

In upcoming papers, I will look at the actual equations of the Keesom, Debye, and London forces, showing specifically how they have to be redone. The most important work was redefining the fields and basing them on real mechanics, as I have done above. But even if we re-assign all the math to the charge field, and switch all the variables and particles, the equations still contain many errors.