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Nucleon mass generated from confinement and a dynamic generation of the quark masses

We have built the nucleon by taking into account explicitly both confinement like in an MIT bag model and a dynamic generation of the quark masses in a Nambu Jona Lasinio model.
Therefore, we have supposed a QCD vacuum modified in a cavity and thus a modified quark condensate coming from the presence of three valence quarks in this cavity. Quarks acquire their masses through their interaction with this modified quark condensate which is itself determined self-consistently by the equilibrium condition for the bag : the outward pressure due to both the motion of three quarks and the modified vacuum in the nucleon must be counterbalanced by the inward pressure of the vacuum outside the bag.
We are able to pass continuously from a nucleon description in a pure MIT bag model to a description using constituent quark masses determined in an NJL model.

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