Proposal algorithmic stablecoin.
Dynamic scarsity coin.

465. Basket.
First of all we create a basket of financial asset, for example physical commodities.
With some API and oracle, we import inside the software the Basket Price, for short PB$.
In this paper we can assume PB=1$ just to simplifies.
The price is updated for example hourly or more frequenly.

Another idea is a basket of the major fiat currencies: usd, euro, ruble, yuan, yen, etc..

786. Every hour, or more frequently, the software checks the price PB$ in USD via API, and other data.

For security reason the software does not accept variation of PB$ over q25=10% daily.

Example.
Let's assume, according the API on 10:00 PB$=100$
Let's assume, according the API on 15:00 PB$=112$

This is a 12% variation in 5 hours. Strange!
It's possible that the API is hacked.
In this case the software uses the average value between 100$ and 112$, and this is 106$.
In the wrost case the software uses a q26=10% variation, this is 110$.

445. More of less this is an algorithmic stabale coin.
It's value should be always near PB$;
Oscillations in the range 0.9 to 1.1 are normal;
Oscillations in the range 0.8 to 0.1.2, are less normal but not catastrophic;

345. Keep in mind, fraud, speculation and mistakes often use the surprise effect, and happen quickly.

When necessary, the software automatically slow downs to be more stable;

The main priority is to keep the value 1 DSC = PB$.

325. The parameter used in this paper are not strict.
The community can change them with a voting system.
For example it's possible to change the quantity q25.

589. Collateral coins.

A. As general rule, 2/3 of the coins inside your wallet are used as collateral for 30days.

B. Every time you send coins from your wallet W1 to a wallet W2,
you can send max the 1/3 of the coins inside W1.

The 2/3 is the collateral.
So, if you disvalue the coins intentionally or not, you disvalue the 2/3 of your coins too;

Furthermore, if you cannot move easly the 2/3 of your coins,
you can use only 1/3 of them to speculate,
your speculative attack is weaker.

B. Look this example.
Let's assume on the day 1, inside your wallet there are 99DSC.
On day 1 you can spend max 33DSC.
You have to wait 30 days before you can spend some other coins.

Let's assume on the day 31, inside your wallet there are 66DSC.
You can spend max 22DSC, becasue 22= 33% of 66.
You have to wait 30 days before you can spend some other coins.
And so on.

This should help the coins system to be stable.
This is a protection against speculation, shorting,
intentional or unintentional disvaluation of the coins.

789. Price 1DSC = PB$.

A. Our main purpose is: the average price over time should be 1DSC = PB$;
Some oscillations, say more or less 10%, are acceptable.

We use a reward system to encurage the users, especially the coins' sellers, to exchange coins when the price is in the range 0.95 PB to 1.05 PB;

When the price is in the range 0.95 to 1, if the seller sends X coins, he gets a reward q16=X * (2.5/1000);

When the price is in the range 1 to 1.05, if the seller sends X coins, he gets a reward q16=X * (5/1000);

The software adds q16 coins to the seller's wallet and burns q16 coins from the buyer/receiver wallet;

Now image there is a whale with many coins, probably he tries to sell this coins in the range 0.95 to 1.05 to get the rewards;

Furthermore, the buyer pays another cost too: q17=q16*0.5.
This asimmetry, discurage bots to buy and sell frequenly and manipulate the market;
If you buy and sell your own coin at the same price, say 1.01 PB$, you lose the 0.025%

B. Observation about cost and reward.

B1. The buyer pays the reward to the seller, and probabilty this cost discurages him to buy, but a casual small buyer who needs coins has not a big influence on the price, and maybe does not care about small infrequent costs;

B2. Ordinary people probably buys and sells less then 5000$ monthly, the 0.025% fee is 7.5$;

C. Timing
If the price stays in the range 0.95-1.05 PB$, every account can send coins 1 times every 10 minutes.
This reduce high frequency bots activity, speculation, etc;

432. If the price is 1DSC=N $, where N<0.95 PB, the software runs this procedures.

Procedure 1. Burning coins.

A. If you buy or sell coins when the price is low, you are disvaluing them, intentionally or not.
So you should pay a penality to the community.

B. If the price is low, maybe there are too many coins in circulation.
So it's necessary to create scarsity.

C. When the price is N<0.95 PB, if you exchange X coins,
the software uses this formula to burns coins.

q5= X * ((LOG10(PRICE(1h)/3))^4)/PRICE(1h)
PRICE(1h) is the average price of the last hour.

Example. Formula q5 with X=1 coin;

Price	PENALITY
1.00	0
0.90	0.08
0.80	0.14
0.70	0.23
0.60	0.40
0.50	0.73
0.51	1.02 *

C. Observation on the formula q5.
As you can see the penality is low if the price is near 1 PB, say 0.9 PB.
It increase quickly if the price is N< 0.7 PB;
It explodes if the price is N< 0.51 PB;

This logarithmic formula is at same time enough elastic in the range 0.95 to 0.7,
and strict for N<0.70.

This property makes this formula fit.

Procedure 2. Emergency mode.

A. If the price is falling under 0.75 PB, this value can be indicative of a speculative attack,
or strong disvaluation.
So, the coin system slow downs. It enter in emergency mode.

Definitions.
price(1h) : the average price of the last hour.
price(500h) : the average price of the last 500 hours.

Every time the price(1h)<0.75 PB the system enter in emergency mode A.
1. The software block the 90% of the coins for 30 minutes.

2. Every account can exchanges coin 1 time every 30 minutes.
3. Every new address requires 3h to be enabled.
4. The cost of every new address rise 0.005$, by default it is 0.001$.

Every time the price(500h)<0.75 PB the system enter in emergency mode B.
1. The software burns daily 0.001% of every wallet, this is 1,4% yearly.
2. The cost of every new address rise 0.005$.

C. Observation on emergency mode B.

C1. The Whales can partially influence the market price, this is true for every asset.
Burning the 1,4% yearly force them to keep the price above the line 0.75 PB.

C2. A burning procedure like this, hits especially the whales, so reduce their influence,
so makes the system less manipulable and stable;

114. If the price is 1DSC=N $, where N>1.05, the software runs this procedures.

A. Penality
If an account exchnages X coins, and if the price is too high, it pay a penality q6(X).
The purpose is to force the users to exchange 1 COIN for 1PB $

In the range 1.05 PB to 1.15 PB there is no penality;
If N>1.15, the penality is q6=X * [((PRICE/((LOG10((PRICE)/3))^4))-38.24)/100]
The formula q6, as the formula q5, is at same time enough elsatic in the range 1.15-1.30,
and stric in the range 1.3 to 1.5.

Example. Formula q5 with X=1 coin;
Price PENALITY

Price Penality
1.15   0.00
1.17   0.04
1.20   0.10
1.30   0.36
1.35   0.55
1.40   0.78
1.44   1.01

As you can see, if the price is N>1.44$, the software burn the 100% of the coins exchanged, from the wallet of the sender and receiver;

The penality discurage buyer and seller to exchange coins when the price is N>1.15$;

C. Inflation

C1. Every year the software generates new coins only if it's necessary;
It generates new coins if the average price of the last year is N>1.05 PB
See below the formulas;

C2. Let's assume the last year the averange number of coins was in total Y, in the whole network, and the averange price of the last year is N(y)>1.05;

This year the software can generate max q10=Y*N(y)*k2 new coins.
Remember, in 1 year there are 52 weeks.
So, every week the software can generate max q11=q10/52 coins;
See below for k2.

If N>1.20 PB, the software uses the formula q10=k2*Y*K2*N_max, where N_max=1.20.
So the inflation is max 20%;

C3. Let's assume the coins are high in demand, and the cap 1.20 is too strict.
It's necessary create another coin system, with its own inflationary rule.
The two system work togheter, every one with its own inflationary rule.
See the sub section 114.D Inflation secondary coin system.

C4. By default the factor k2=1.
The community can change it in the range 0<k2<1;

C4. To know how to forge new coins, see the section about the forging ;

C5. Furthermore, to avoid whales accumulate many coins,
the 5% of the coins generated are distribuited randomly;

D. Inflation secondary coin system.

D1. The secondary coin system is like the first one.
Change 1 parameters: N_max;

D2. N_max=1.44
Where come from 1.44?
In theory the price cannot be higher then 1.44, see the section 144.C Inflation.

D3. Stability.
The secondary coin system probably is less stable than the original one, but is able to satifies the demand of coins when the demand is high.

Remember every year the original coin system can growth 20%, the second one 44%;

E. Timing

If the price is N>1.05 every account can send or receive coins 1 times every 10 minutes as usual.
This reduce high frequency bots activity etc;

457. Observations 1. Payment system and storage of wealth.
This is not a coin system you can use every time and every where.
Just as, you cannot use your car every time and every where: free car areas, etc

This can be good as payment system in some cases. See observation about timing.
As tool to store value, probably this is not the best, not the wrost;
Probably only a diversified basket with several financial asset can help you to store value:
gold, house, usd, government bond, major crypto currency, etc..

457. Observations 2. Why use it?
Blockchain is resilent.

Blockchain dont depend by a central point.
If the central point makes some mistakes, the community pay for it.

This system has some procedure to discurage aggressive distructive speculation, and market panic;
In particular, collateral coins and coins burning should be a garantee for the community.

539. Observations on Timing.

Probably this is not a system you use to buy a coffe, but it is fit when you buy something online,
and you can wait 10-20 minutes the payment.

The system is intentionally slow, so it slow down speculation, high frequency bots, etc.

334. How and when use it.
You should use this sytem in combination with another one.
When there is a market crash, you should not use it,
because the system burn your coin if you exchange them.

So do not touch them.
Use another payment system.

997. Forging.
A. It's possible to forge coins only when the price 1 DSC > 1.15 PB,
to create inflation and decrease the price;

DSC stand for: dynamic scarsity coin.

B. There are several ways to forge coins;

C. Simple lottery.
People buy a lottery ticket with some cryptocurrencies, say ethereum coin.
Ticket price 1$. Award 10 coins.
The software burns the ethers.
Percentage of coins generated in this way: 10%.

D. Lottery POW;

D1. You can mine a lottery ticket;
It is very cheap, say 0.0001$;
If you win say 100 RMDSC, you can mine 100 DSC.
Be aware, you dont win 100DSC, you win the right to mine 100 DSC;
The acronym RMDSC stand for: Right to Mine DSC;

If you dont want mine, you can sell the winning ticket to another miner;
The price of the winning ticket is arbitray.
Miners has to mine the coins in less than 2 years, else he loses the right to mine the coins;

D2. Why a lottery POW?
Some people has cheap electricity, while others pay much more.
Furthmore, some people has much money to buy GPU, ASIC and other mining machines.
Both these situations are unfair and create the whales;

The lottery POW fix partially this inequality;

D3. Why the software generates free tickets and not free coins?
Generate the 100% of the coins for free can be risky.
The risk is: people do not appreciate easy coins.

D4. There are at least 3 ways to use a winning ticket.
1. You are a miner, so just mine the coins.
2. You are not a miner, so sell the ticket to a miner.
3. You are not a miner.
Say you win 100 RMDSC, and the mining cost for 100 DSC is 100$;
You pay say 120$ to the miner, the miner mines 100DSC, finally the miner returns you back 100DSC;
If 100 DSC worth 100$, the profit for the miner is 20$;

D5. Percentage 30%.

E. Charity donation 1.

Example.
In the software there are a small exchange: BTC, DSC, ETH, etc

In the software the are the bitcoin address of several charity orgaizations.
The community can select them;

Let's assume the averange cost of production for 1 ether in the last 3 years was 50$;

You send q21 ether coins to the eth adress A1;
A1 is a valid eth address;
You cannot handle the account A1, only the software internal scripts can handle A1;

The internal sripts send q21 ethers to the eth address A2.
A2 is the address of a charity foundation.

The software forges for you 50*q21 DSC;

D6. Percentage 30%.

F. Burn another cryptocurrency;

Example.
Let's assume the averange cost of production for 1 ether in the last 3 years was 50$;

You send q20 ether coins to the eth adress A3;
A3 is a valid eth address;
You cannot handle the account A3, only the software internal scripts can handle A3;

The adress A3 burns the q20 ethers.
The software forge for you 50*q20 DSC;

Rememeber the burning process for convenience.
The eth adress A3 sends coins to the eth address A4.
None can use A4, so your q20 ethers are gone.

Be aware the software does not use the ether market price,
but the cost of production of the ether coin.

Percentage 30%.

F. Cap
The stablecoin market cap 2002 was 170 billions USD.
I dont want the 1st year this coin worths more then 0.1% of the market cap,
because if a project grow too fast it attract too much speculation, and it's hard to handle.

So I set up the market cap for the 1st year 100 million.
Every year by default it can grow max the 20% of the previous year.
This depends by its adoption, the yearly inflation, etc.

See the section 114.C
In particular the formula q10=k2*Y*N_max