

# COVID, GEOMETRY GENERATORS ET AUTRES CARTO-GEEKERIES

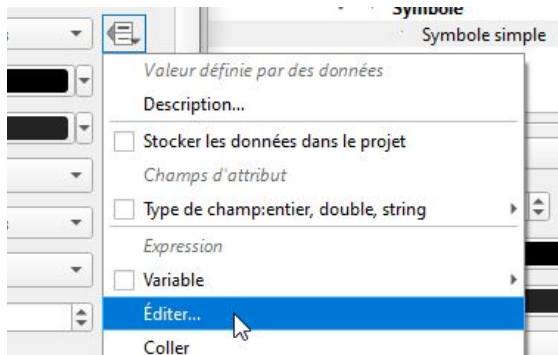
@DATAGISTIPS  MATHIEU RAJERISON

CONFÉRENCE QGIS-FR 2020 - SUR LA TOILE

# 2013



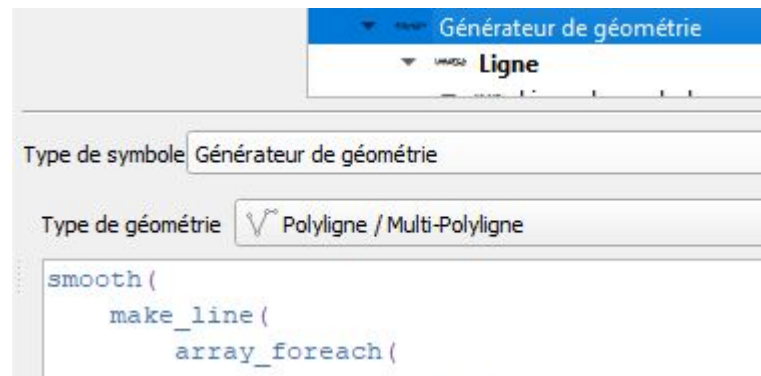
## Data-defined properties



# 2016



## Geometry generators



Informationnel  
*Data-driven*

BIEN REÇU !



*une carte  
parlante*

AMAZING !



*geodataviz*

PEUT MIEUX  
FAIRE



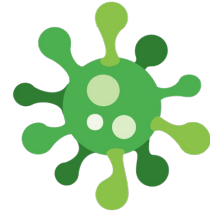
QUE DE LA  
FRIME !

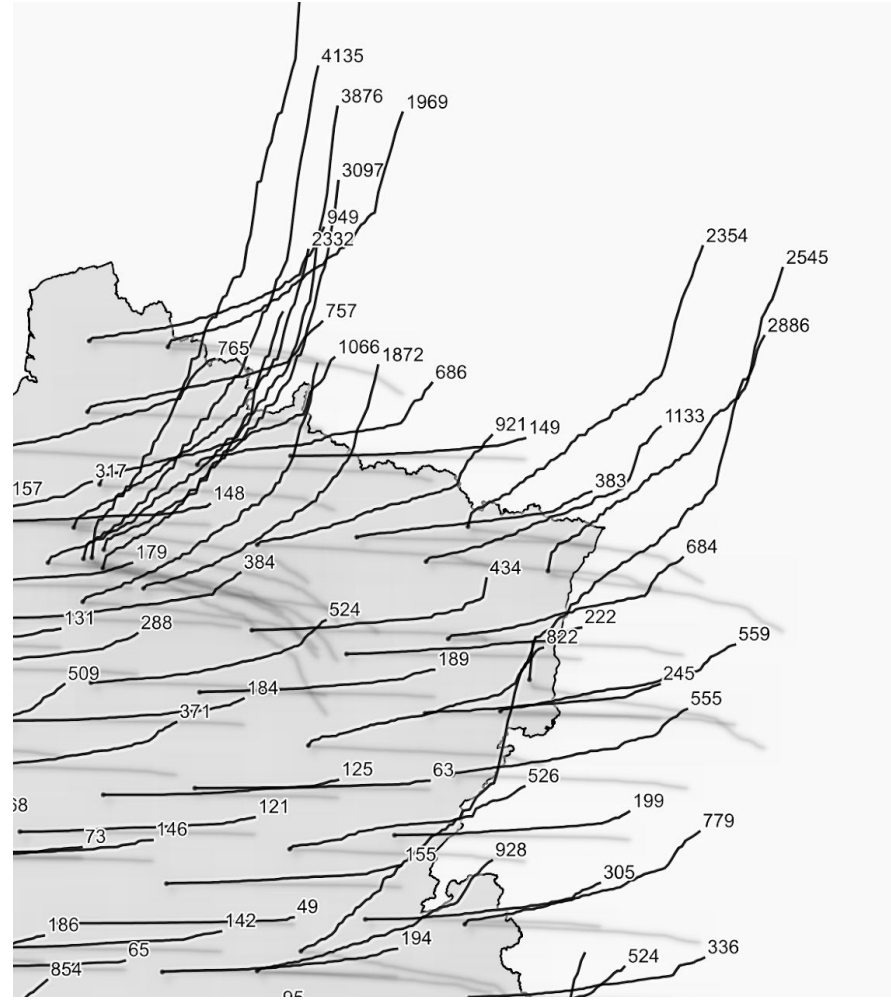
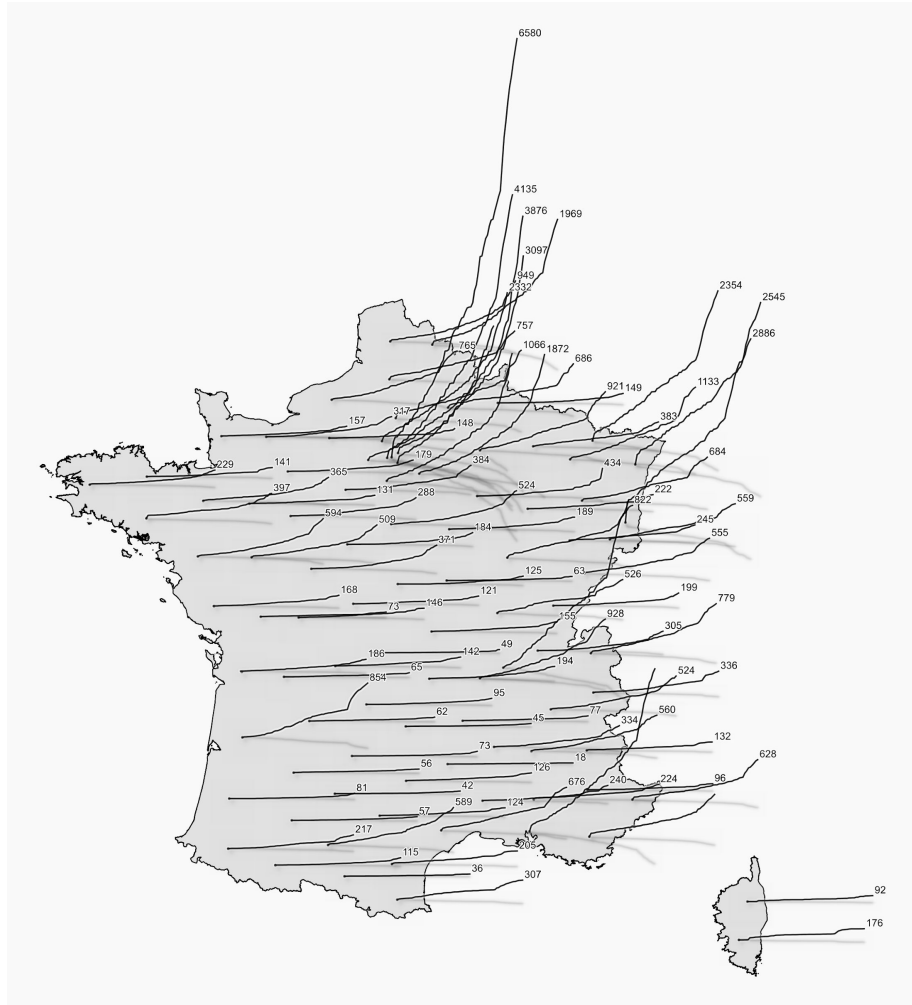


*geodata-art*

Originalité  
*Aesthetic-driven*

CARTE DE LA COVID





# ÉCHOS



**Alberto Cairo**   
@AlbertoCairo



I hadn't seen this type of map before cc [@kennethfield](#)

[Traduire le Tweet](#)

# Change in reported cases since May 3

Line thickness shows  
the current number of cases  
relative to county population

Less → More

Counties with no cases on  
May 3 are not shown

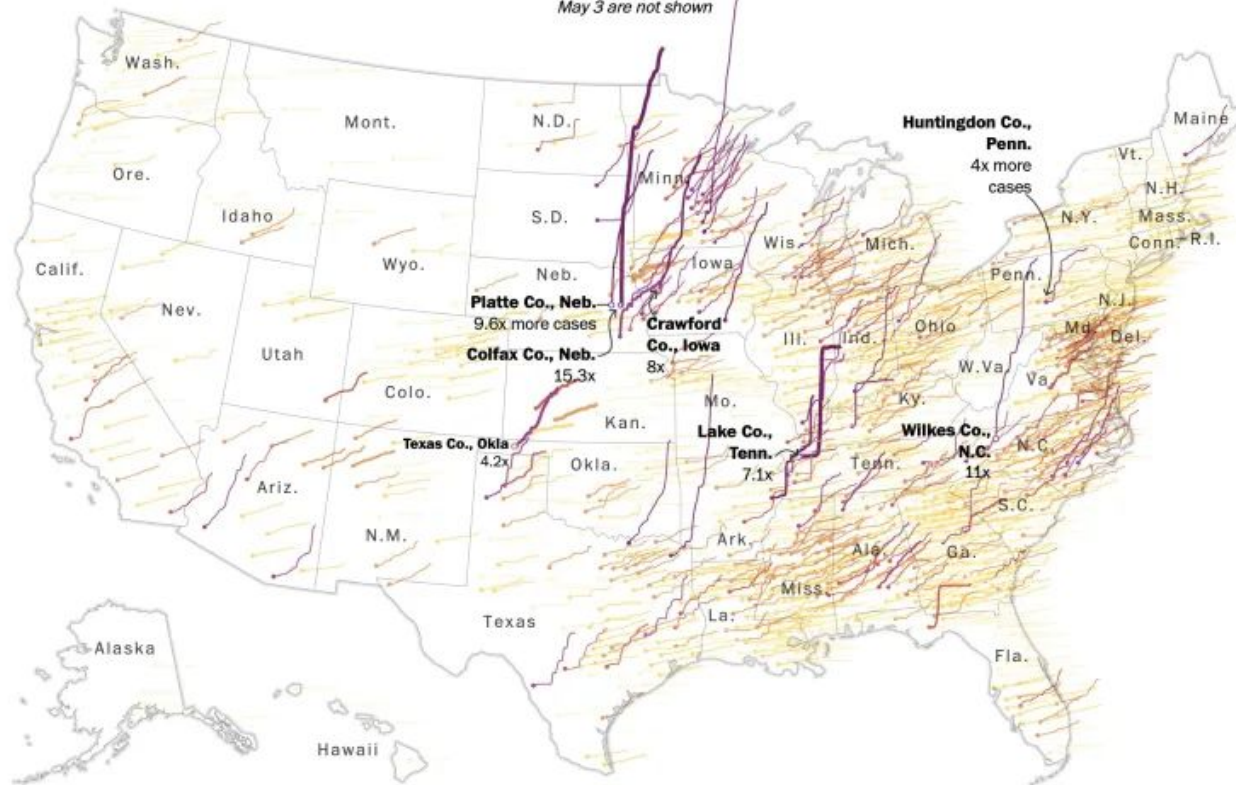
Line height and color  
show change in reported  
cases relative to May 3.

7x more cases  
than on May 3

4x

2x

About the same number  
of cases as on May 3





John  
Nelson

## CovidPulse





CONCEPTION

Bouches-du-  
Rhône

Bouches-du-Rhône, Jour 1, 1  
Bouches-du-Rhône, Jour 2, 2  
Bouches-du-Rhône, Jour 3, 5  
Bouches-du-Rhône, Jour 4, 7  
Bouches-du-Rhône, Jour 5, 9  
Bouches-du-Rhône, Jour 6, 13  
Bouches-du-Rhône, Jour 7, 15  
Bouches-du-Rhône, Jour 8, 18  
Bouches-du-Rhône, Jour 9, 21

Bouches-du-Rhône

**Relation**

Bouches-du-Rhône, Jour 1, 1  
Bouches-du-Rhône, Jour 2, 2  
Bouches-du-Rhône, Jour 3, 5  
Bouches-du-Rhône, Jour 4, 7  
Bouches-du-Rhône, Jour 5, 9  
Bouches-du-Rhône, Jour 6, 13  
Bouches-du-Rhône, Jour 7, 15  
Bouches-du-Rhône, Jour 8, 18  
Bouches-du-Rhône, Jour 9, 21

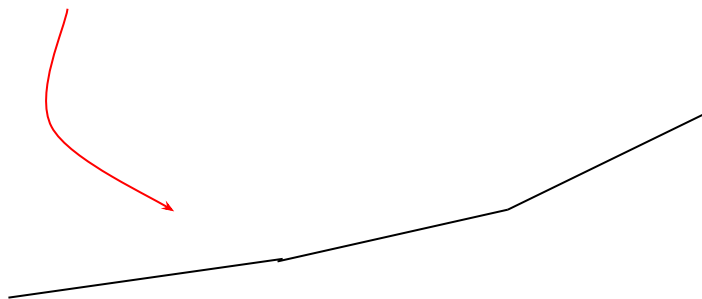
Bouches-du-Rhône

*Relation*

Bouches-du-Rhône, Jour 1,	1
Bouches-du-Rhône, Jour 2,	2
Bouches-du-Rhône, Jour 3,	5
Bouches-du-Rhône, Jour 4,	7
Bouches-du-Rhône, Jour 5,	9
Bouches-du-Rhône, Jour 6,	13
Bouches-du-Rhône, Jour 7,	15
Bouches-du-Rhône, Jour 8,	18
Bouches-du-Rhône, Jour 9,	21

Bouches-du-Rhône, [1, 2, 5, 7, 9, 13, 15, 18, 21]

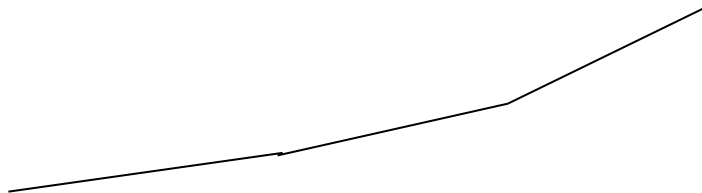
Bouches-du-Rhône, [1, 2, 5, 7, 9, 13, 15, 18, 21]



Bouches-du-Rhône, [1, 2, 5, 7, 9, 13, 15, 18, 21]



X, Y



```

with_variable(
  'atlasid',
  @atlas_featureid - 1,
  with_variable(
    'height',
    100,
    with_variable(
      'width',
      200000,
      with_variable(
        'nb_cas',
        array_sort(
          relation_aggregate(
            'donnees_ho_dep_DEPARTEMEN_INSEE_DEP',
            'array_agg',
            to_int("dc")+to_int("hosp")+to_int("rea")+to_int("rad"))
          ),
        geom_from_wkt(
          'LINESTRING (' ||
          x(centroid($geometry)) || ' ' || y(centroid($geometry))
          || ', ' ||
          array_to_string(
            array_foreach(
              generate_series(1, @atlasid),
              -- X Coordinates
              to_string(x(centroid($geometry)) +
                (@element/array_length(@nb_cas)*@width)) || ' ' ||
              -- Y coordinates
              to_string(y(centroid($geometry)) + @nb_cas[@element]*@height)
            ),
            ', ' || ' '
          )
        )
      )
    )
  )
)

```



Informationnel  
*Data-driven*

BIEN REÇU !



*une carte  
statistique*

AMAZING !



*geodataviz*

PEUT MIEUX  
FAIRE



**Une carte  
statistique**

QUE DE LA  
FRIME !



*geodata-art*

Originalité  
*Aesthetic-driven*

Informationnel  
*Data-driven*

BIEN REÇU !



*une carte  
statistique*

AMAZING !



*geodataviz*

PEUT MIEUX  
FAIRE



QUE DE LA  
FRIME !

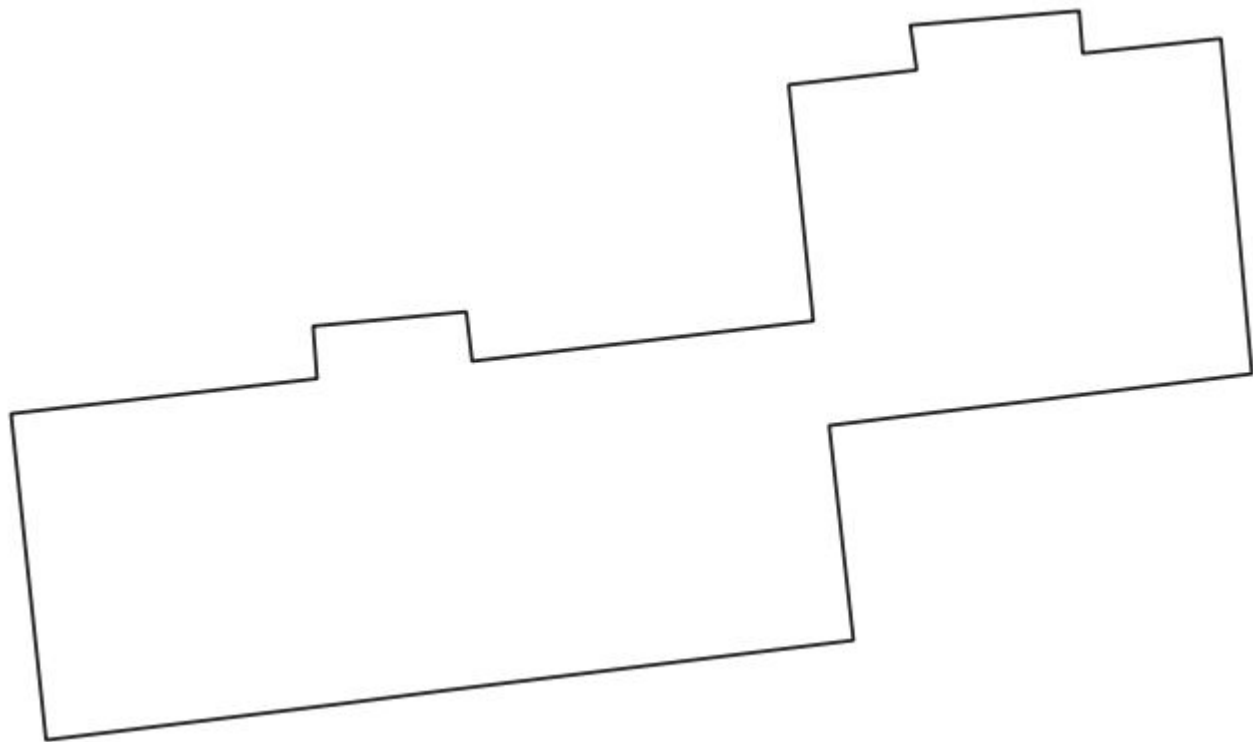


*geodata-art*

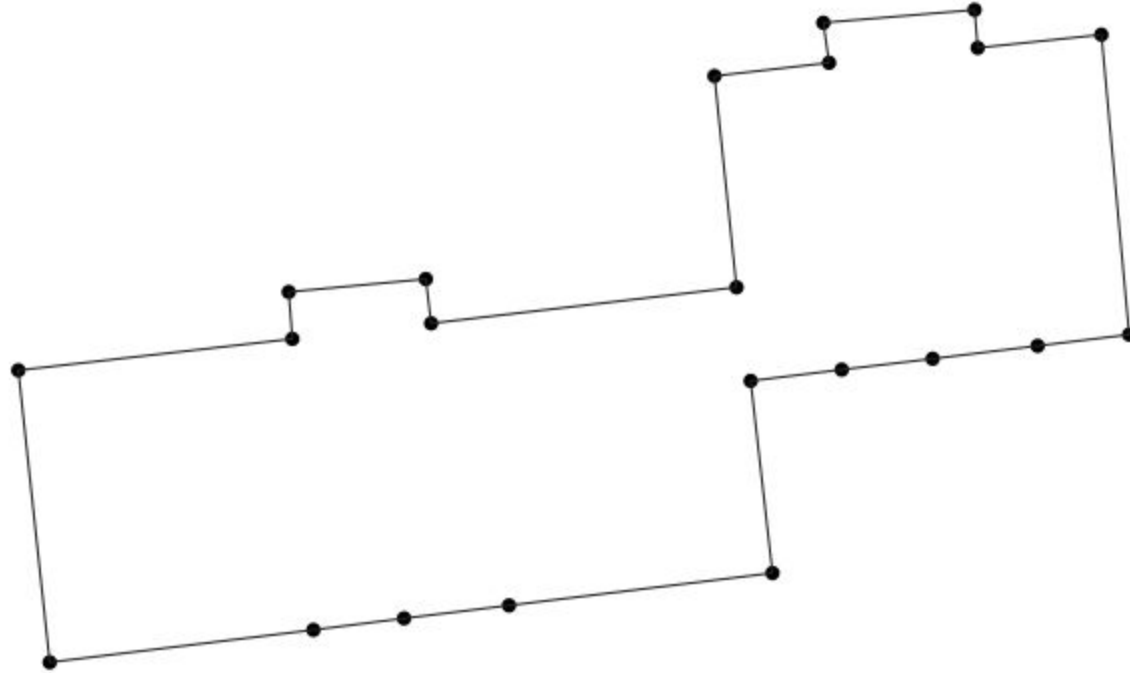
Originalité  
*Aesthetic-driven*



COMMENT FAIRE COMME SI MA  
CARTE AVAIT ÉTÉ DESSINÉE AU  
CRAYON À PAPIER ?

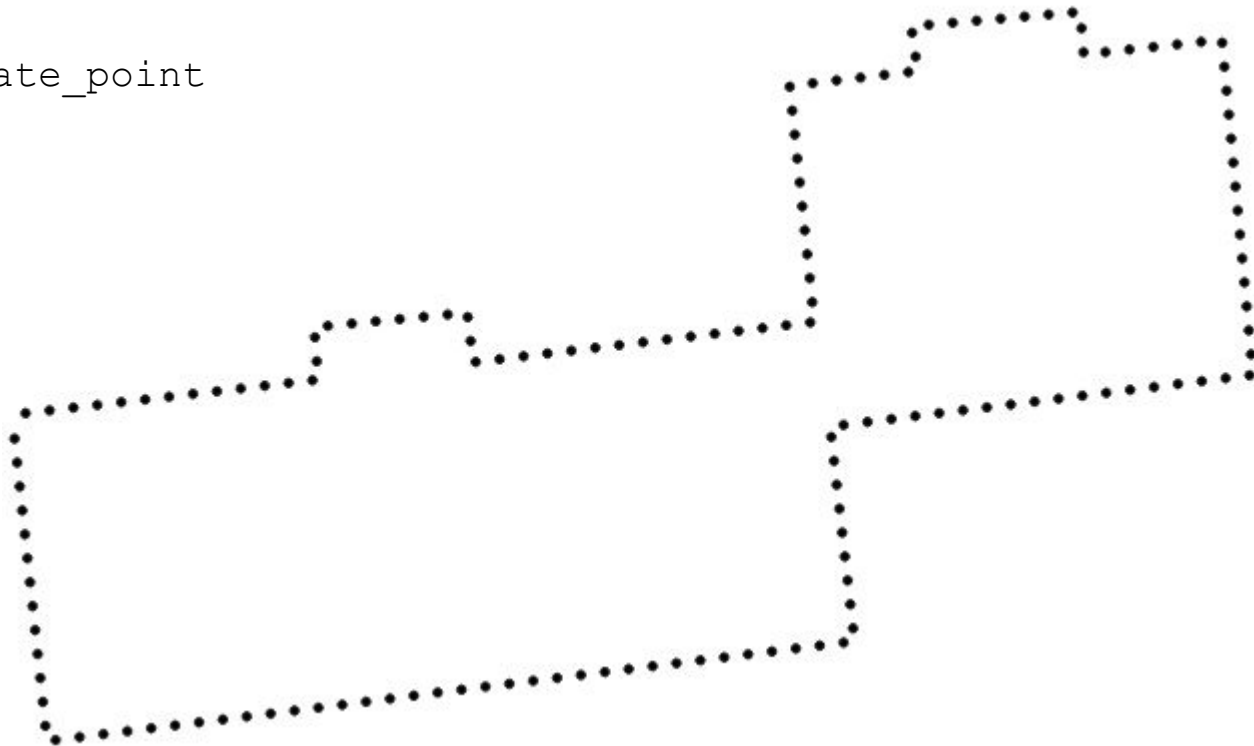


VOICI LES NOEUDS CONSTITUTIFS



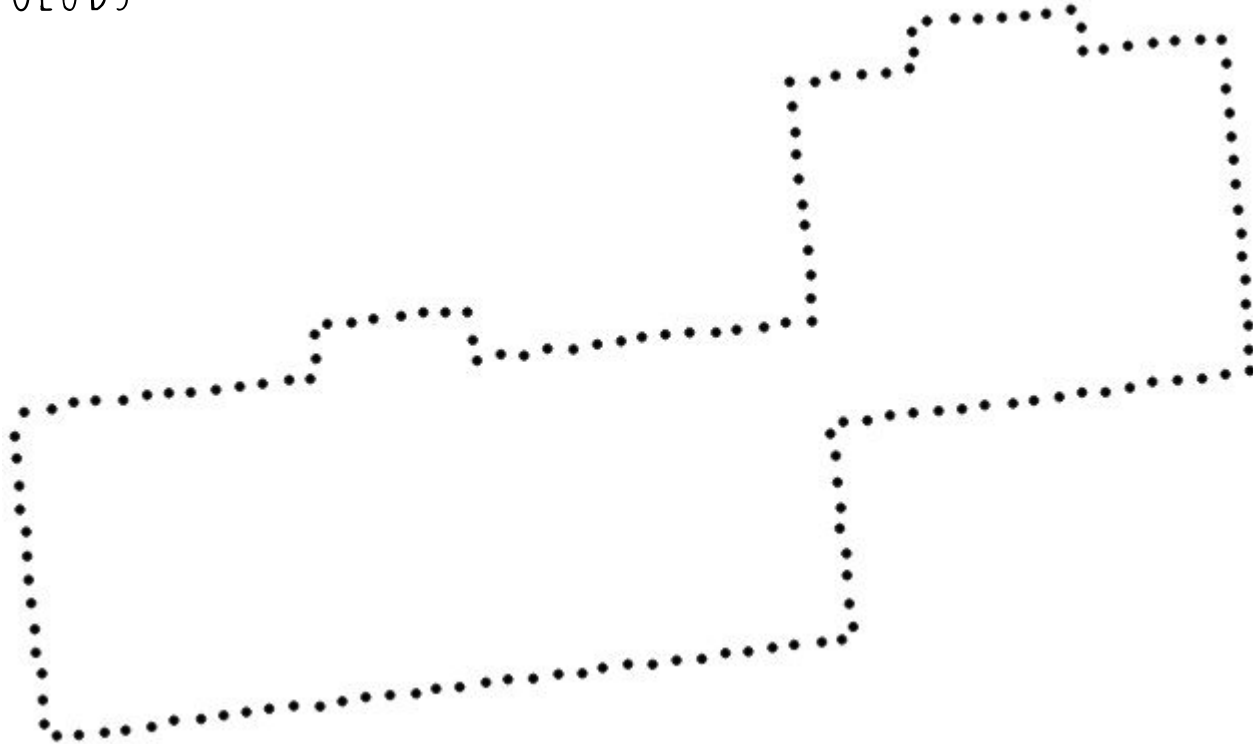
# ON DENSIFIE

```
generate_series  
array_foreach  
line_interpolate_point
```



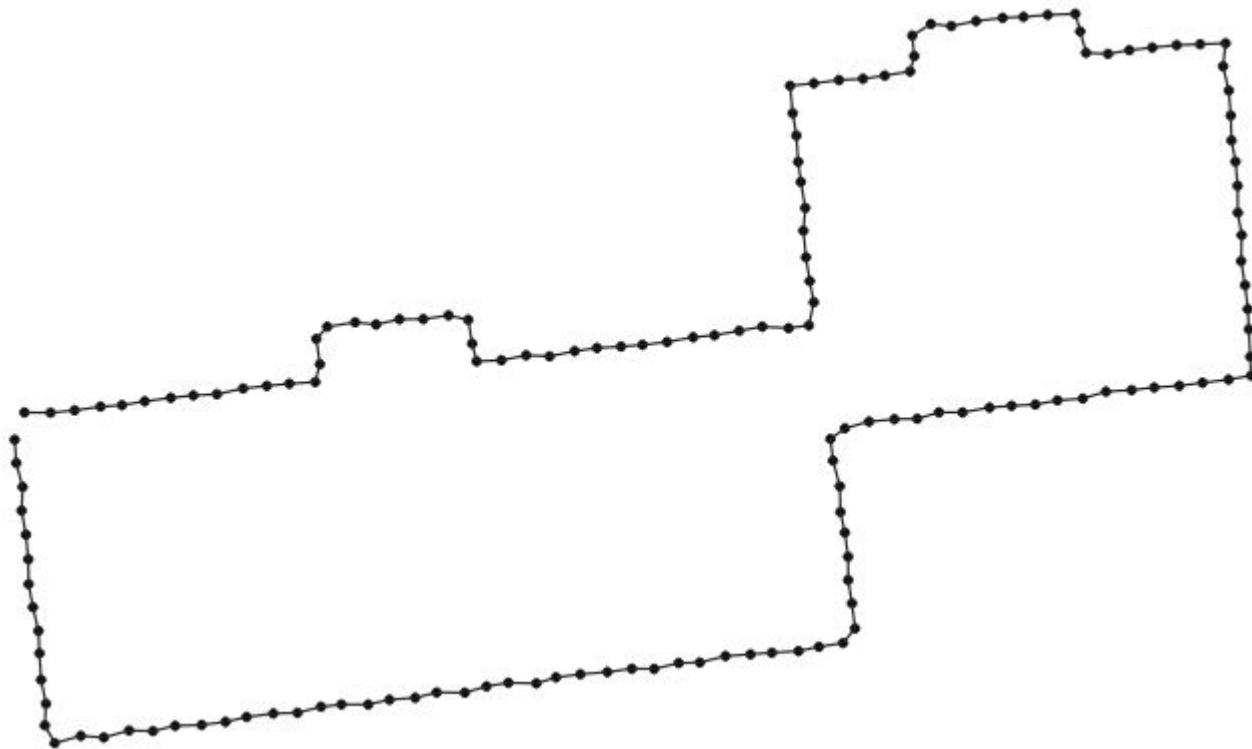
# ON DÉCALE AU HASARD LES DIFFÉRENTS NOEUDS

translate



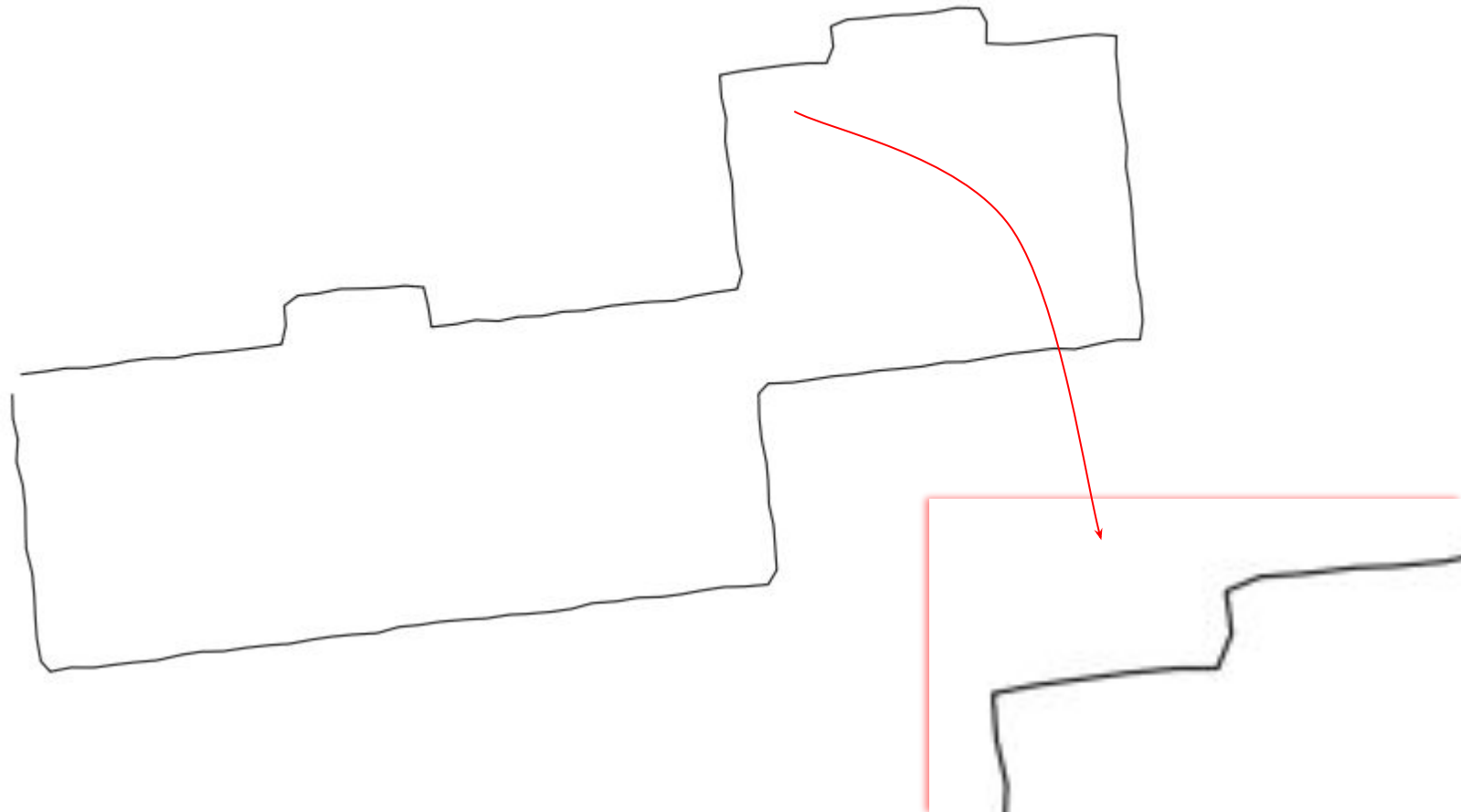
# ON RECONSTITUE LA LIGNE

make\_line

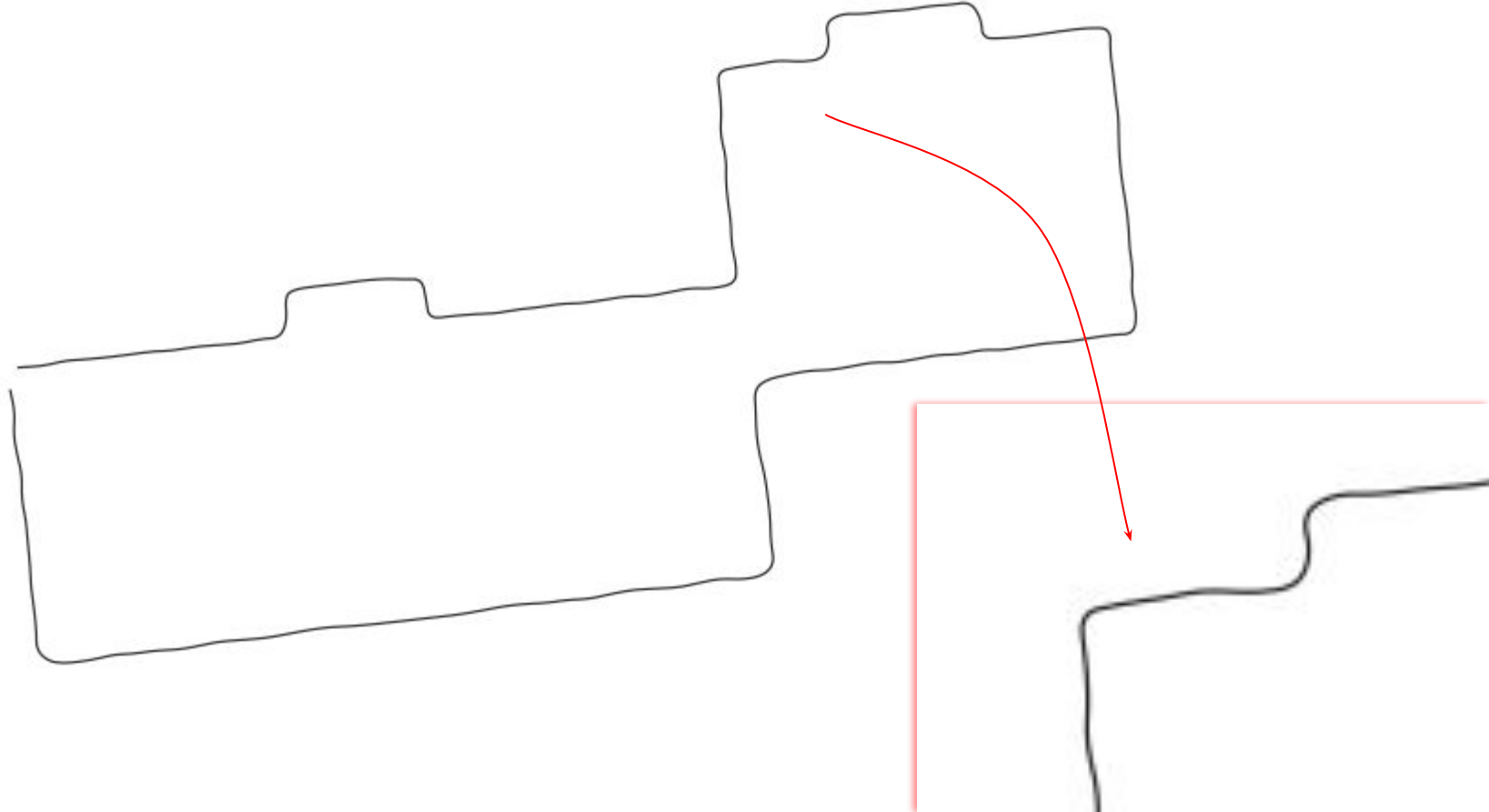




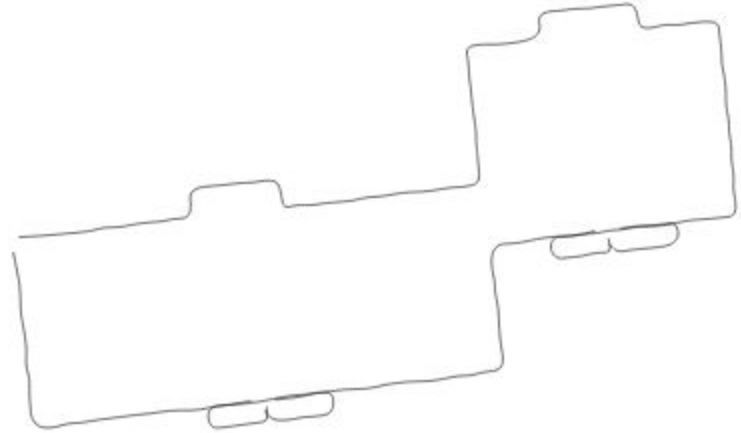
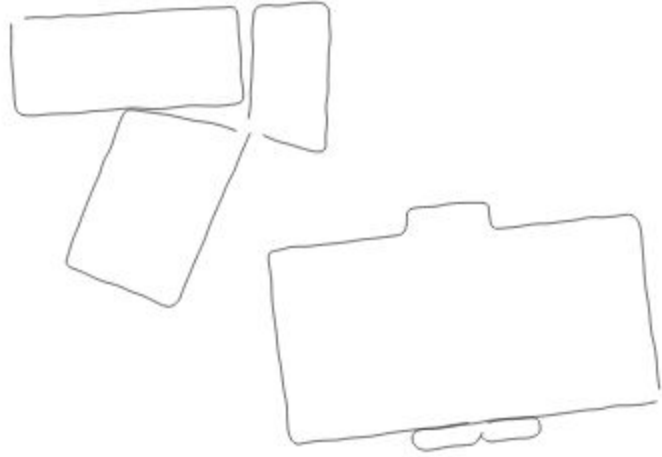
ET VOILÀ LE RÉSULTAT !



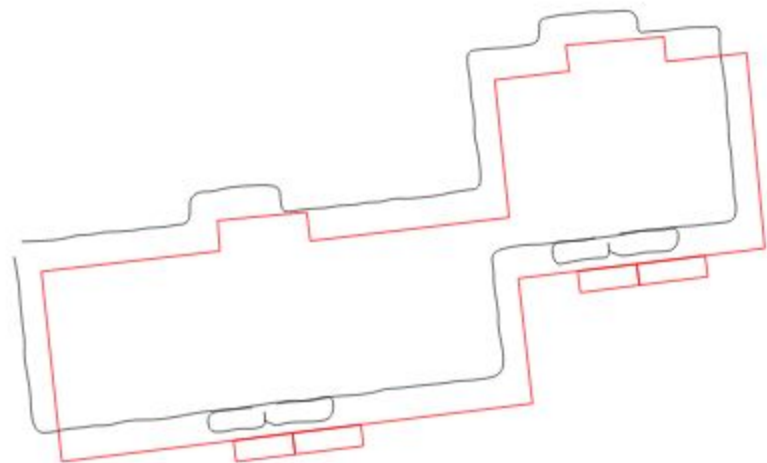
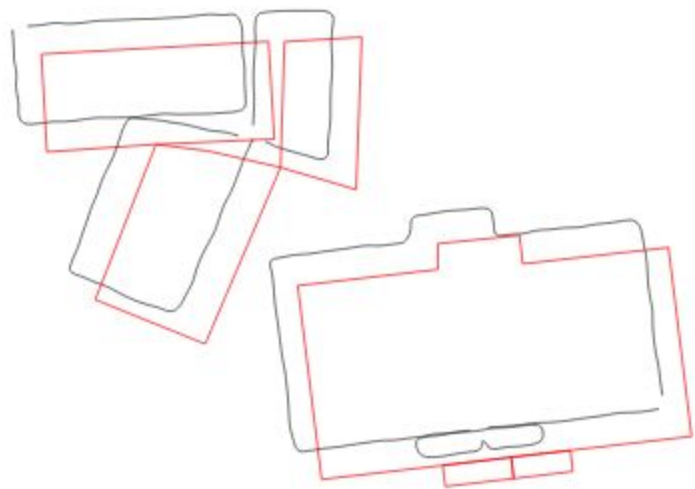
ON LA LISSE  
smooth



VOICI LE RÉSULTAT SUR LA COUCHE ENTIÈRE



AVANT / APRÈS



```

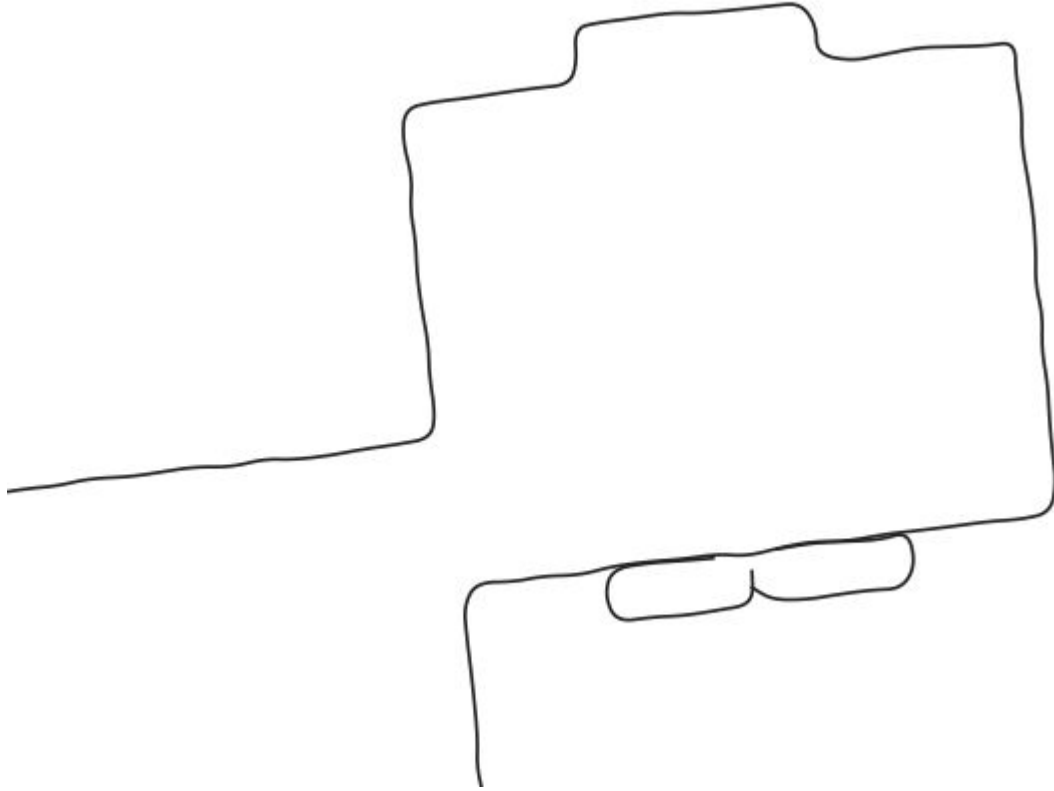
smooth(
  make_line(
    array_foreach(
      generate_series(
        1,
        length(exterior_ring($geometry)),
        1
      ),
      translate(
        line_interpolate_point(
          exterior_ring($geometry),
          @element
        ),
        randf(-0.1, 0.1), -- dx
        randf(-0.1, 0.1) -- dy
      )
    )
  )
),
3
)

```

(polygone)



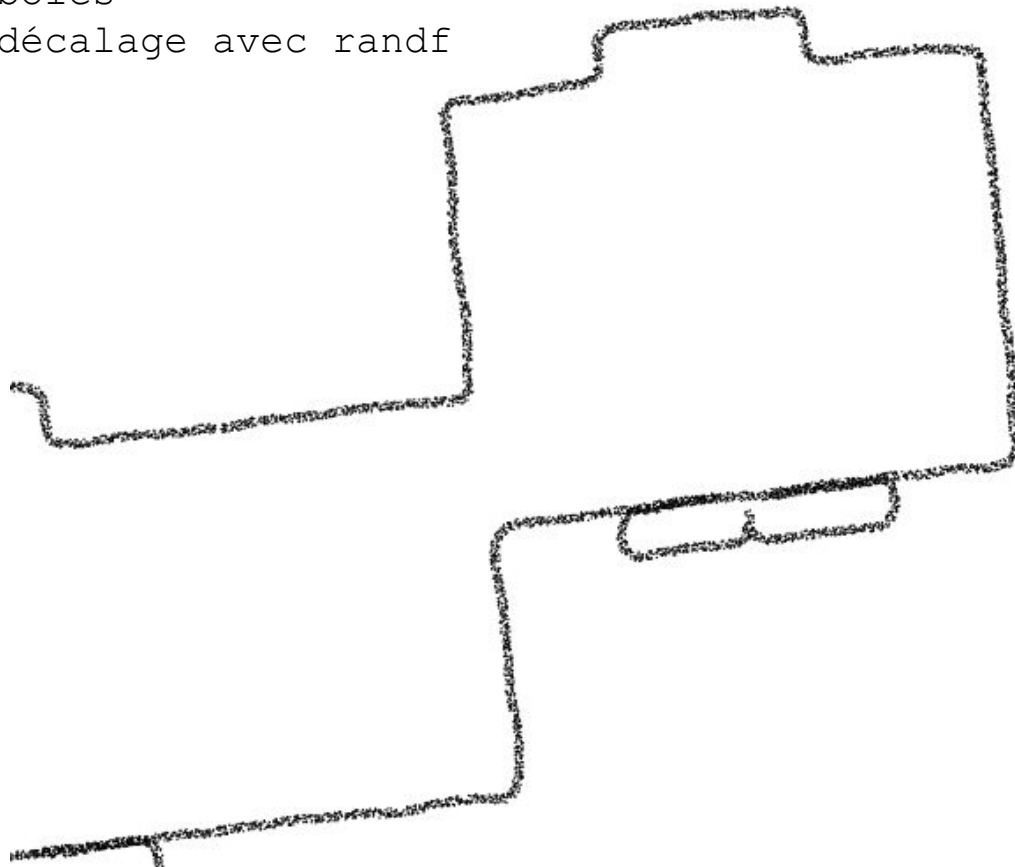
ON PASSE AU CRAYONNÉ ?

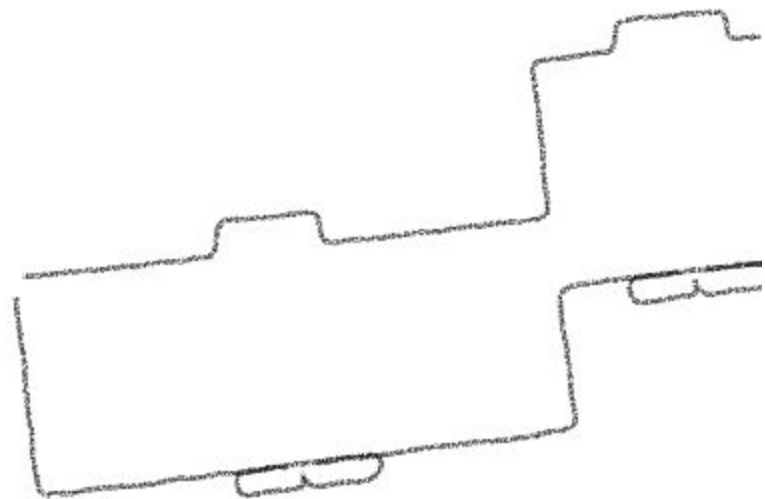
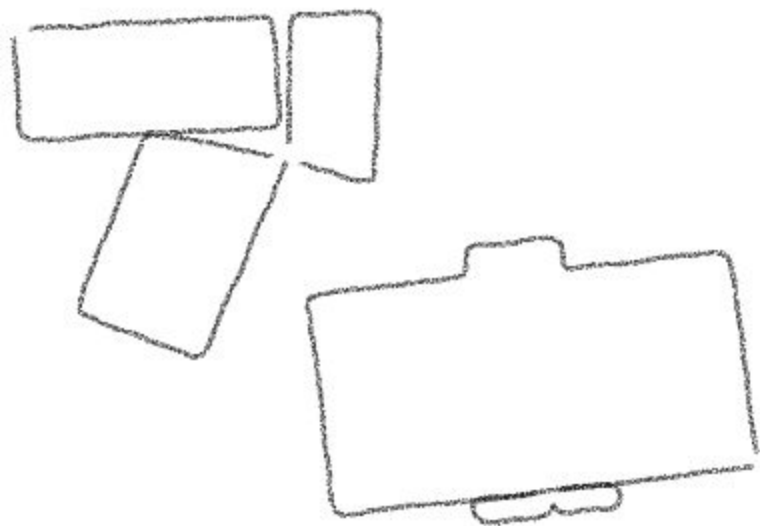


# PLEIN DE POINTS QUE L'ON DÉCALE UN PEU AU HASARD

ligne de symboles

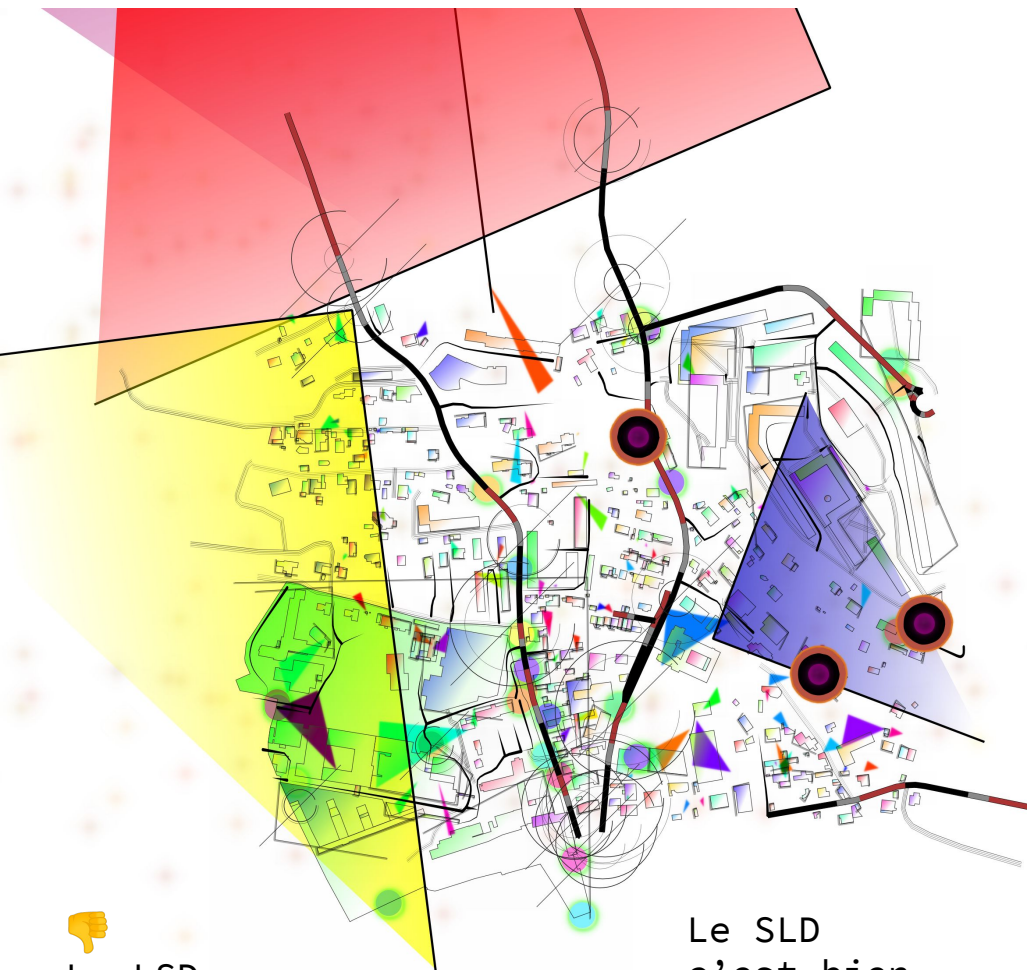
propriété : décalage avec randf







QANDINSKY

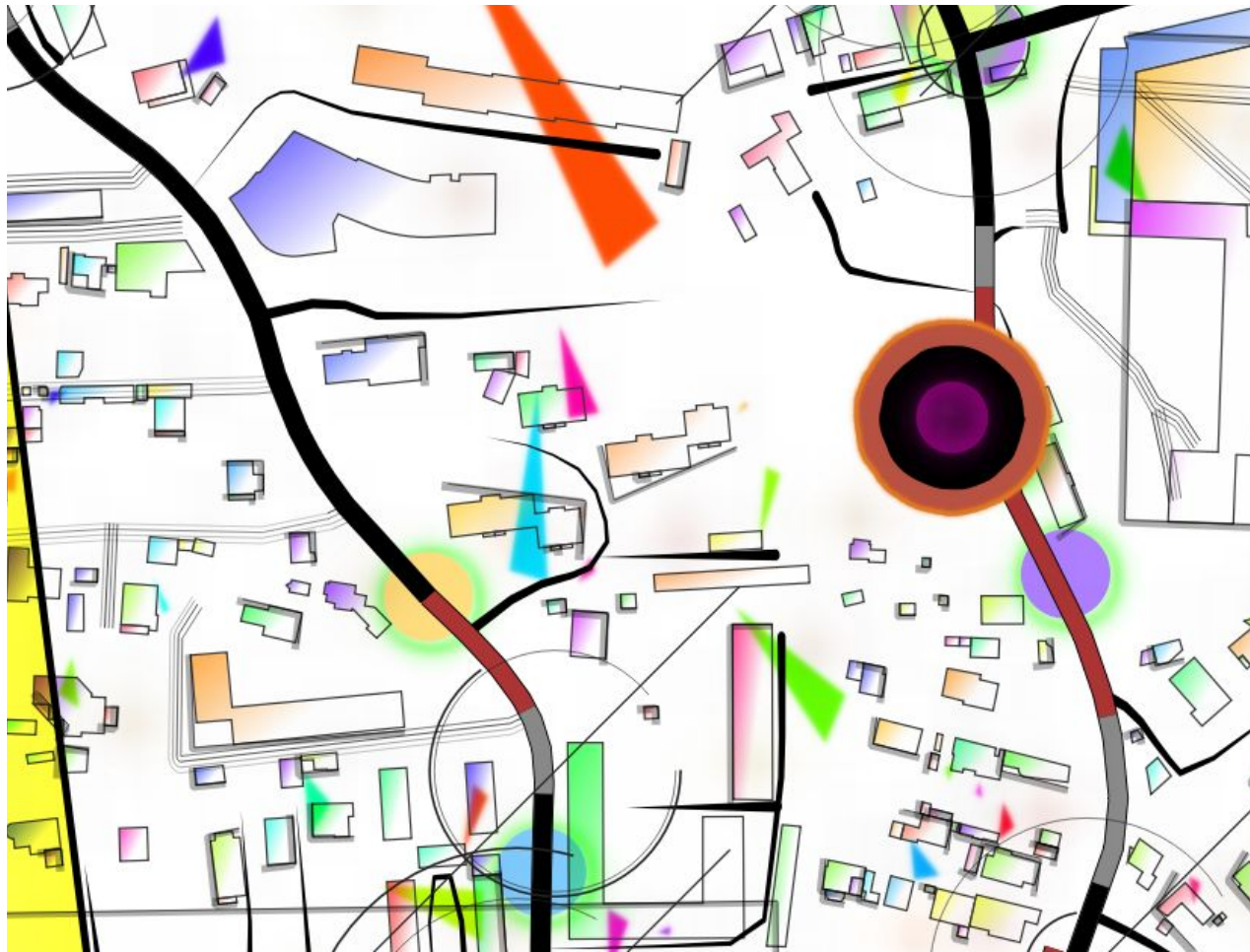


Le LSD  
c'est mal

Le SLD  
c'est bien



Composition VIII - Wassily Kandinsky







STYLES

GÉNÉRATEUR DE GÉOMÉTRIES  
LIGNE DE SYMBOLES  
REMPLISSAGE AVEC MARQUEURS ALÉATOIRES



# FONCTIONS

humain → RANDF

GENERATE\_SERIES

ARRAY\_FOREACH

LINE\_INTERPOLATE\_POINT

TRANSLATE

MAKE\_LINE

BUFFER

NODES\_TO\_POINTS

EXTERIOR\_RING

design  
génératif

formes

# MES CONSEILS

- ISOLER UN ÉLÉMENT, SUR LEQUEL TRAVAILLER
- PRÉFÉRER LE LAMBERT-93 OU PSEUDO-MERCATOR (3857)
- TRAVAILLER EN UNITÉS DE CARTES
- CONSERVER UNE ÉCHELLE DE TRAVAIL ET UTILISER LA LOUPE
- TRAVAILLER LES STYLES EN LIVE (Panneau style des couches)

INSPIREZ-VOUS ET PARTAGEZ VOS CRÉATIONS

[HTTPS://PLUGINS.QGIS.ORG/STYLES/](https://plugins.qgis.org/styles/)

ROMAIN LACROIX

TOPI TJUKANOV

CARTOCALYPSE

KLAS KLARSSON



# MERCI DE VOTRE ATTENTION



[@datagistips](https://twitter.com/datagistips)   
<https://datagistips.hypotheses.org/>  
<https://github.com/datagistips>