

Rapport stage M2

Anas

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1 Algorithmme

Algorithm 1: K+S decomposition algorithm

Input : A bipartite graph G and two decreasing tables $(d_1, \dots, d_{|B|})$
and $(d'_1, \dots, d'_{|W|})$ of vertex degrees

$r \leftarrow 1, s \leftarrow |W|;$

$S \leftarrow 0, S' \leftarrow 0;$

while $r < |B| + 1$ *or* $s > 0$ **do**

if r *is universal* **then**

 print $(r,)$

$S \leftarrow S + d_r$

$r \leftarrow r + 1$

else if s *is isolated* **then**

 print $(, s)$

$S' \leftarrow S' + d'_s$

$s \leftarrow s - 1$

else

while *a new component is not detected* **do**

$S \leftarrow S + d_r$

while $d'_s < r$ **do**

$S' \leftarrow S' + d'_s$

$s \leftarrow s - 1$

end

if $S = r * s + S'$ **then**

 print (r, s)

else

end

$r \leftarrow r + 1$

end

end

end

2 Introduction

There is a theory which states that if ever anyone discovers exactly what the Universe is for and why it is here, it will instantly disappear and be replaced by something even more bizarre and inexplicable. There is another theory which states that this has already happened.



Figure 1: The Universe

3 Conclusion

“I always thought something was fundamentally wrong with the universe” [1]

References

- [1] D. Adams. *The Hitchhiker’s Guide to the Galaxy*. San Val, 1995.