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**[ISPRS2021] Abstract 722 decision**

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**XXIV ISPRS Congress** <isprs2020@conftool.com>

9 March 2021 at 05:13

Reply-To: papers@isprs2020-nice.com

To: nfatholahi@uwaterloo.ca

Cc: sabrina.li@ouce.ox.ac.uk, awase008@gmail.com, zahid.butt@uwaterloo.ca, junli@uwaterloo.ca

Dear Sarah N. Fatholahi,

We are delighted to inform you that the paper 722 - "SPATIAL MODELING OF COVID-19 INCIDENCE RATES IN THE GREAT TORONTO AREA, CANADA" has been accepted for publication in the International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences. The Archives act as the proceedings of the 2021 edition of the XXIVth ISPRS Congress.

The program of the 2021 digital edition of the Congress will be released in May, once all camera-ready contributions will have been received.

In order to be integrated in the Archives, you must submit a full paper version of your abstract by \*April 21, 23h59h59s Pacific Time\* (camera-ready version). This deadline is strict and will not be extended. Once submitted, the paper will be accepted in the ISPRS Archives after i) passing the plagiarism check, ii) verifying that the paper is in line with the ISPRS guidelines, and iii) checking that its technical content is conform to the first version and follow reviewers' recommendations.

We wrote some useful guidelines for you: <http://www.isprs2020-nice.com/index.php/guidelines-for-camera-ready-papers/>

Inclusion in the proceedings requires to have registered for the 2021 edition of the XXIVth ISPRS Congress. More details about registration and refund policy will be available on ISPRS Congress website soon: <http://www.isprs2020-nice.com/index.php/participate-submit/#register>.

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**CONTRIBUTION DETAILS**-----  
ID: 722

Title: SPATIAL MODELING OF COVID-19 INCIDENCE RATES IN THE GREAT TORONTO AREA, CANADA

**REVIEW RESULT OF THE PROGRAMME COMMITTEE:**

This contribution has been accepted and will be published in the 2021 proceedings

Your paper will be published in the ISPRS Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences: <https://www.isprs.org/publications/archives.aspx>

One of the co-authors has to be registered to the 2021 edition of the Congress for final publication of your paper.

**OVERVIEW OF REVIEWS**-----  
Review 1

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**Contribution of the Submission**

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This paper has focused on how and to what extend environmental variables such as air quality, social, and meteorological parameters are related to transmission dynamics of COVID-19 in greater Toronto Area (GTA). Spatio-temporal pattern of the pandemic is analyzed using Moran's I statistics and the local multi spatial models of geographically weighted regression (GWR) model is used to simulate the impact of the environmental variables on COVID-19 incidence rates. The proposed method considers numerous socio-demographic, consumption and environmental data for the Canadian region. Three GWR models were executed to analyze the statistical and spatial relationships between the COVID-19 incidence rate with independent variables of socio-demographic, air pollution, and meteorological data. Reliable results including estimated coefficient, p-value, R2 and standard error in the three sets of parameters has been obtained after running the multi-regression models. The analysis has assisted in providing key indicators for decision-making into preventing the disease transmission risks.

#### Evaluation of the Contribution

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*Innovation	(10%): 8
Scientific formulation	(10%): 6
Experiments and validation	(10%): 4
Relevance	(10%): 8
Quality of Presentation	(10%): 8
Overall Recommendation	(50%): 9
Total points (out of 100)	: 79

#### Comments for the authors

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- The data and metadata description including spatial and temporal scale and resolution, should be explained.
  - It should be explained whether any sensitivity analyses has been undertaken to select or weight the influencing socio-economic and environmental data on COVID-19 propagation between the COVID-19 spread and the independent variables considered?
  - How the estimated coefficient, p-value, R2 and standard error in the three sets of parameters has been obtained after running the multi-regression models.
  - What are the three GWR method employed?
  - Some graphical presentation of the results of the proposed model should be added.
  - The quantitative and qualitative results and statistical analyses of the results should be added.
  - The novelty of the results should be explained.
  - The weaknesses and advantages of the proposed methodology should be explained.
  - How social distancing has affected the prevention of spreading of COVID-19?

#### Review 2

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#### Contribution of the Submission

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The paper proposes an approach to study the hypothesis that the rate of propagation of COVID\_19 disease can be described from three

parameters: air quality, social, and meteorological indicators. The method used is based on the GWR method. The last is well adapted to such analysis.

#### Evaluation of the Contribution

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\*Innovation (10%): 4  
Scientific formulation (10%): 6  
Experiments and validation (10%): 4  
Relevance (10%): 6  
Quality of Presentation (10%): 4  
Overall Recommendation (50%): 7  
Total points (out of 100) : 59

#### Comments for the authors

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The authors used GWR to measure the spatial-correlation between the rate of disease and the three variables: air pollution, meteoroidal and social.

Nevertheless, the authors do not give details about how the method was applied, how the independent variables are computed (spatial scale), which are the results and especially which is the influence of the spatial scale (the modified area units problem) on the results.

Figure 1, is the equation for the classical regression model not for the GWR

I would like to see this paper for a presentation, but the authors should describe a bit more the resultants. Thus, I recommend reducing Section 1 and describing more Section 3.

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Best regards,  
Clément Mallet and Florent Lafarge  
Program chairs of the the XXIV ISPRS Congress

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XXIV ISPRS Congress (Nice, France)  
Submission/registration website: <http://conftool.com/isprs2020/>  
General website: <http://www.isprs2020-nice.com/>