



RENIECYT - LATINDEX - Research Gate - DULCINEA - CLASE - Sudoc - HISPANA - SHERPA UNIVERSIA - E-Revistas - Google Scholar
DOI - REDIB - Mendeley - DIALNET - ROAD - ORCID

Title: Air Quality Index for Ciudad Juárez based on a Community Collaboration Scheme.

Authors: RODRÍGUEZ-GARCÍA, Nabile Edith , VÁZQUEZ-GÁLVEZ, Felipe Adrián, ESTRADA-SALDAÑA, Fernando y HERNÁNDEZ-HERNÁNDEZ, Israel

Editorial label ECORFAN: 607-8695
BCIERMMI Control Number: 2019-039
BCIERMMI Classification (2019): 241019-0039

Pages: 13
RNA: 03-2010-032610115700-14

ECORFAN-México, S.C.
143 – 50 Itzopan Street
La Florida, Ecatepec Municipality
Mexico State, 55120 Zipcode
Phone: +52 1 55 6159 2296
Skype: ecorfan-mexico.s.c.
E-mail: contacto@ecorfan.org
Facebook: ECORFAN-México S. C.
Twitter: @EcorfanC

www.ecorfan.org

Holdings		
Mexico	Colombia	Guatemala
Bolivia	Cameroon	Democratic
Spain	El Salvador	Republic
Ecuador	Taiwan	of Congo
Peru	Paraguay	Nicaragua

Introduction

Methodology

Results

Conclusions

References

Introduction

- Advances in computing technologies allow to develop general circulation climate models that allow studying the behavior of climatic variables in time horizons of more than 20 years.
- So, scenarios are built on the vulnerability of populations and environmental systems with a direct effect on economic activities.

Introduction

- This proposal addresses the needs of having a practical and easy to interpret climate indicator that allows the community to be informed and alerted on the negative effects of air quality in their health.
- Most of the air quality indexes are based on readings from monitoring stations with geospatial coverage of 5 km or more, so it does not necessarily reflect the environmental conditions that affect most people.

Methodology

- One of the main fundamentals used for the development of this project was IMECA, which uses a standard metric based on the NADF-009-AIR-2006 standard that allows to know through identifiers, the level of environmental quality.
- It's distinguished by defining the equations and cut-off points established in the Official Mexican Standard for the variables used as a basis, and adapts to the reading needs with a minimum amount of time. The adaptation has been to satisfy the need to create own devices of UACJ.

Methodology

Data collection

- Web service

Data classification

- Concentration range

Calculation

- Transformation equations

Product

- Equation result

Interpretation for people

- Quality range

Methodology

Universidad Autónoma de Ciudad Juárez

Calidad de Aire

La calidad del aire es:

Adecuada para llevar a cabo actividades al aire libre

Se pueden llevar a cabo actividades al aire libre

Temperatura 24.2°C

Condiciones

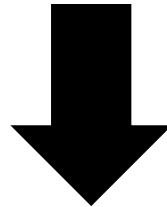
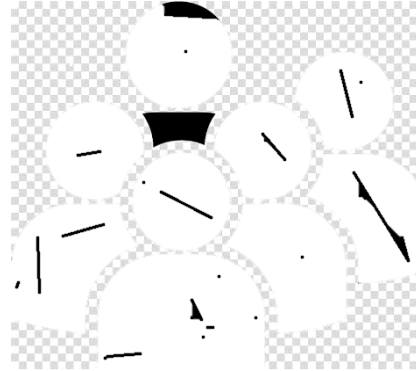
O ₃	71.49 PPB
CO	0.15PPM
PM _{2.5}	8.721304 micro-g/m3
Temperatura	24.2°C

Condiciones actuales

07/13/2019

01:50:00 PM

Copyright © 2019



Station 25: Fire station

Coordinates: 31°46'24.86"N, 106°33'40.68"O



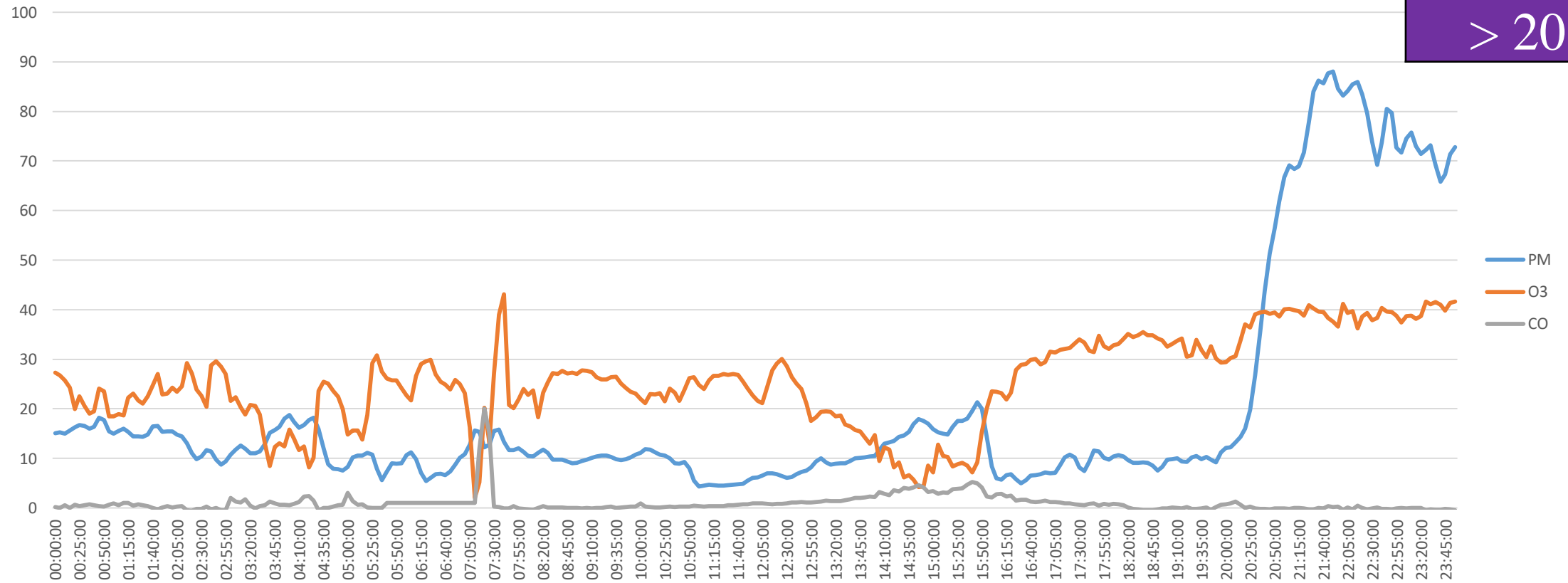
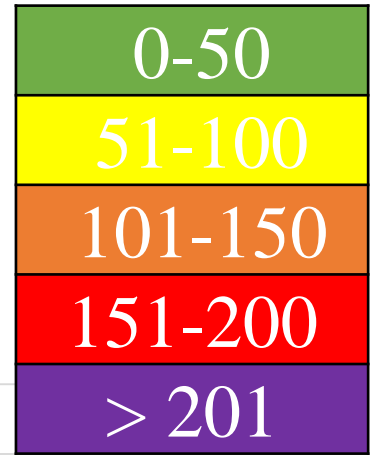
Methodology

- Variables: CO, O₃ and PM_{2.5}

	CR CO (C) PPM	TE CO	CR O₃ (C) PPB	TE O₃	CR PM_{2.5} (C) µg/m³	TE PM_{2.5}
0-50	0.00 - 5.50	C * 50/5.5	0 - 55	C * 50/55	0.00 - 15.40	C * 50/15.4
51-100	5.51 - 11.00	C * 50/5.5	56 - 110	C * 50/55	15.50 - 40.40	20.50+C*49/24.9
101-150	11.01 - 16.50	C * 50/5.5	111 - 165	C * 50/55	40.50 - 65.40	21.30+C*49/24.9
151-200	16.52 - 22.00	C * 50/5.5	166 - 220	C * 50/55	65.50 - 150.40	113.20+C*49/84.9
> 201	> 22.00	C * 200/22	> 220	C* 200/222	> 150.40	C * 201/150.5

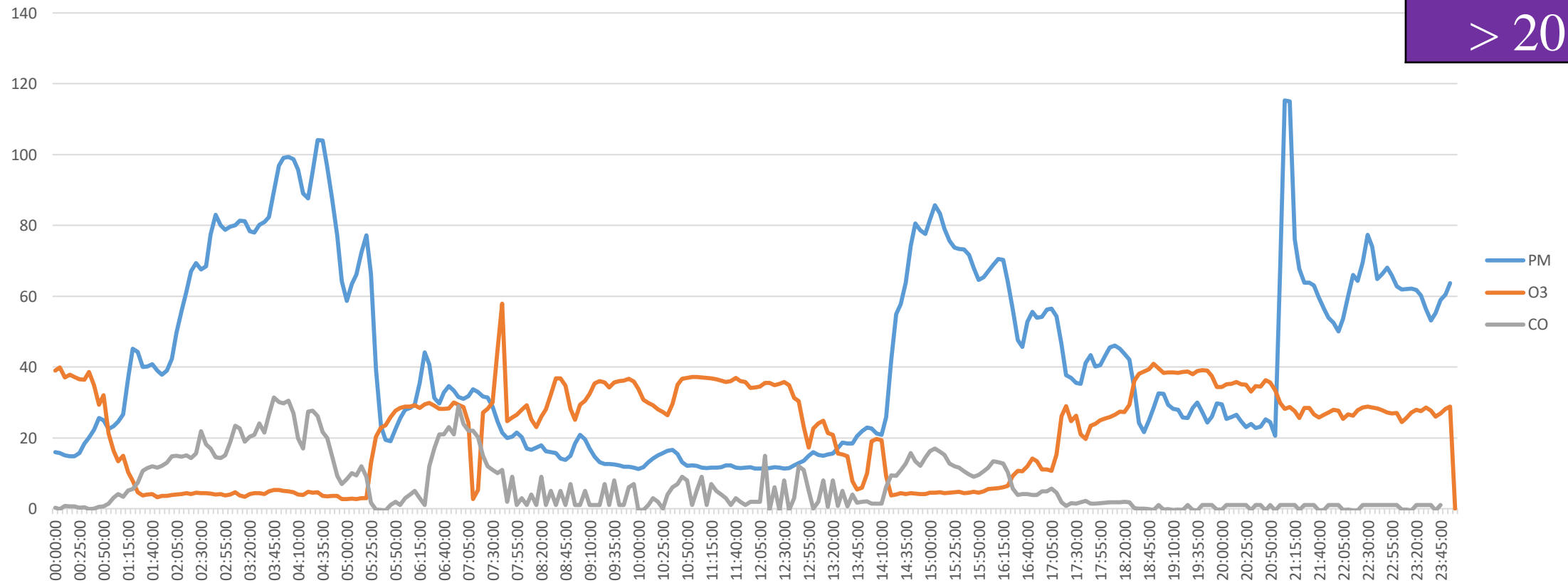
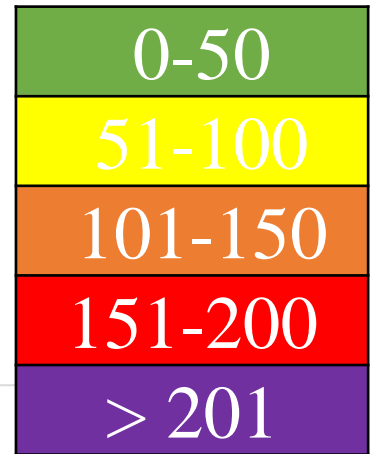
Results

February 06, 2019



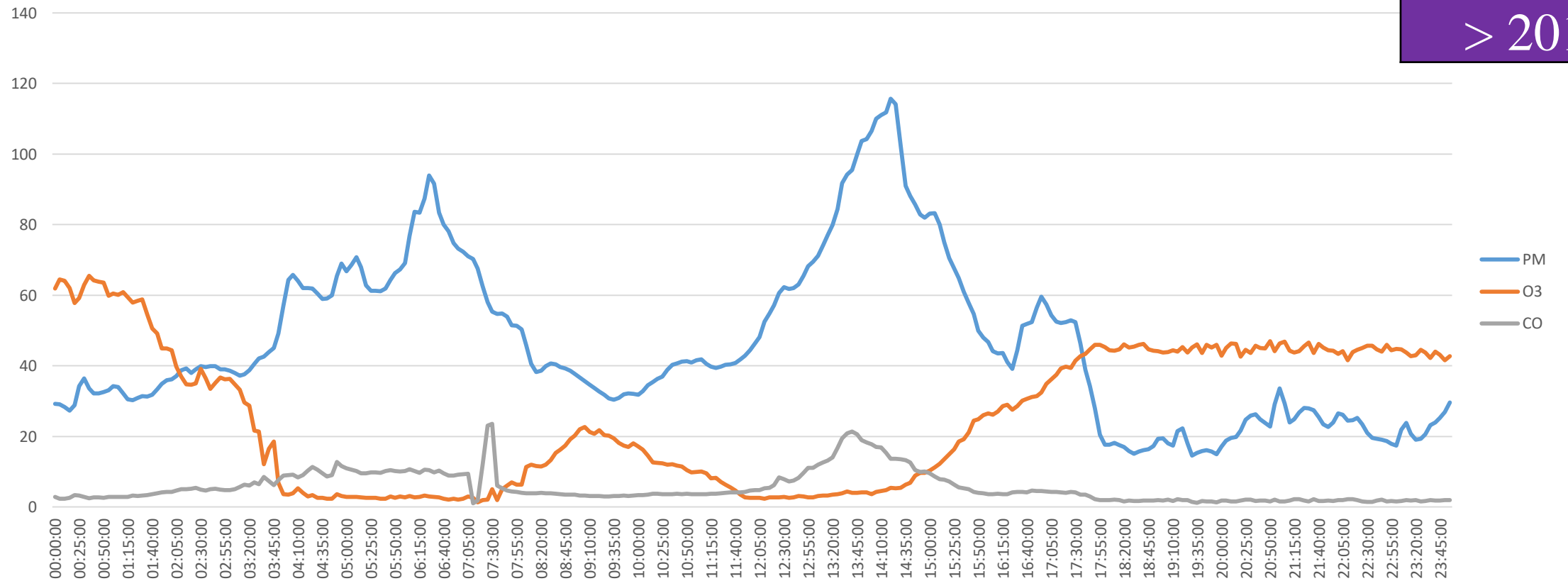
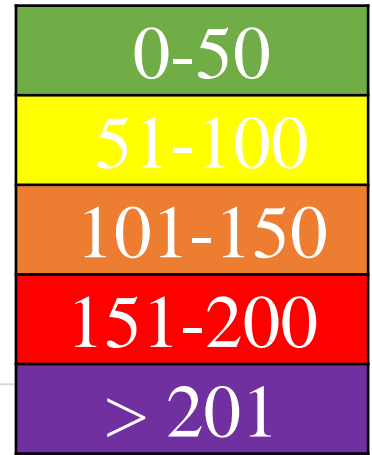
Results

March 07, 2019



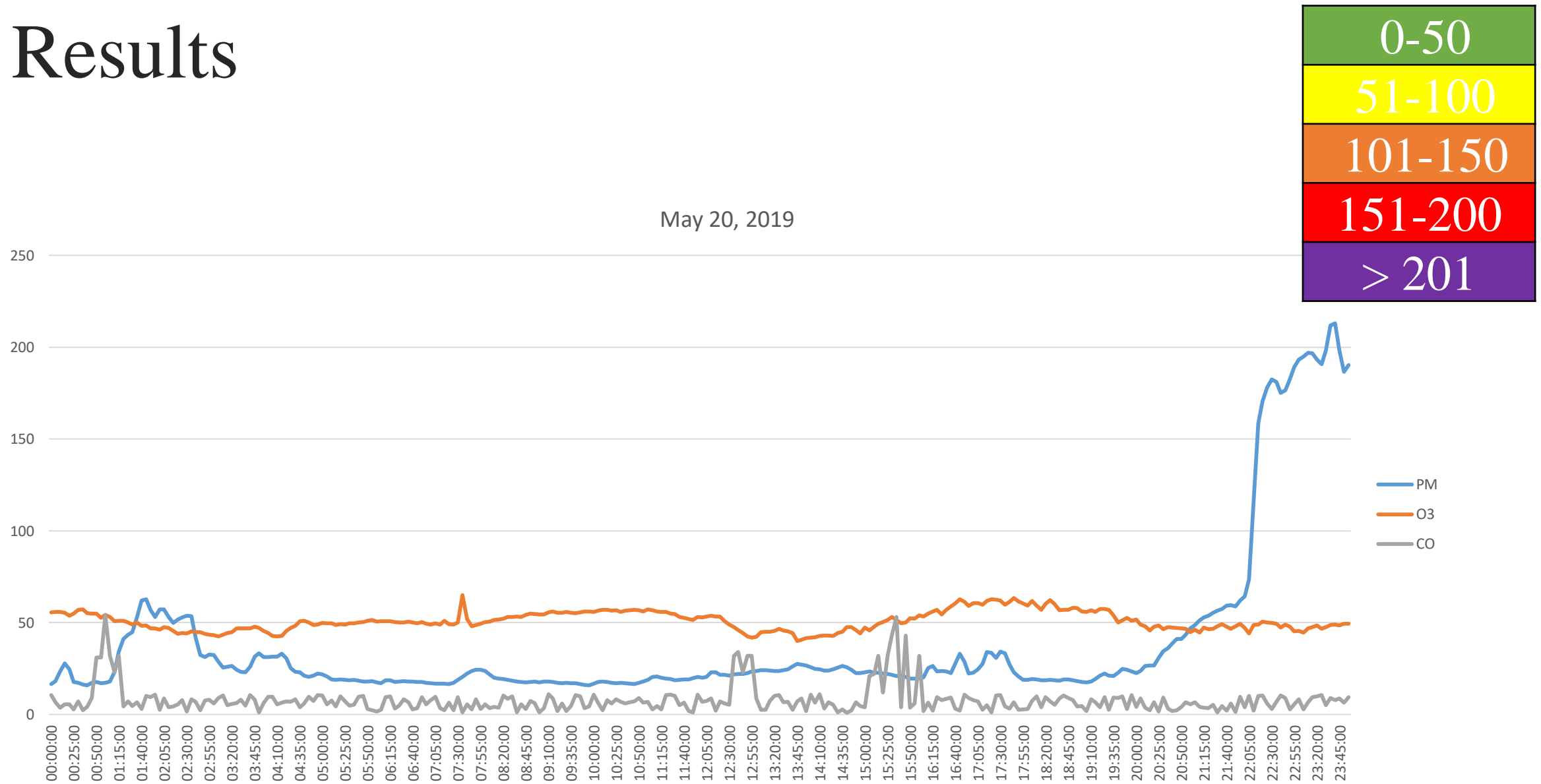
Results

April 02, 2019



Results

May 20, 2019



Conclusions

Air quality is an advantage over the environment, related to the quality of life of being human. Including tools to combat the effects of gases and particles found in the environment, it is possible to prevent diseases that directly affect the population.

References

Correa García, A. (2011). Los Índices de Calidad del Aire : Alcances y Limitaciones.

Escobar, L. (2006). Indicadores sintéticos de calidad ambiental: un modelo general para grandes zonas urbanas, *XXXII*, 73–98.

Federación, D. O. de la. (2012). Dof: 16/07/2012, 1–14.

Guevara Sanginés, A. (2005). POLÍTICA AMBIENTAL EN MÉXICO: GÉNESIS, DESARROLLO Y PERSPECTIVAS, 163–176.

Perevochtchikova, M. (2013). La evaluación del impacto ambiental y la importancia de los indicadores ambientales, *XXII*, 283–312.

Querol, X. (2008). Calidad del aire, partículas en suspensión y metales, 447–453.

Quiroga, R. (2001). *Indicadores de sostenibilidad ambiental y desarrollo sostenible: estado del arte y perspectivas*.

Rojas Bracho, L., & Garibay Bravo, V. (2003). Las partículas suspendidas , aeropartículas o aerosoles : ¿ hacen daño a la salud ?; ¿ podemos hacer algo ? *Gaceta Ecológica*.

Romero Placeres, M., Diego Olite, F., & Álvarez Toste, M. (2006). La contaminación del aire: su repercusión como problema de salud, *44(2)*, 1–14.

Rosales-Castillo, J. A., C, M., Torres-meza, V. M., C, M., Olaiz-fernández, G., Borja-aburto, V. H., & Ph, D. (2001). Los efectos agudos de la contaminación del aire en la salud de la población : evidencias de estudios epidemiológicos, *43(6)*.



ECORFAN®

© ECORFAN-Mexico, S.C.

No part of this document covered by the Federal Copyright Law may be reproduced, transmitted or used in any form or medium, whether graphic, electronic or mechanical, including but not limited to the following: Citations in articles and comments Bibliographical, compilation of radio or electronic journalistic data. For the effects of articles 13, 162,163 fraction I, 164 fraction I, 168, 169,209 fraction III and other relative of the Federal Law of Copyright. Violations: Be forced to prosecute under Mexican copyright law. The use of general descriptive names, registered names, trademarks, in this publication do not imply, uniformly in the absence of a specific statement, that such names are exempt from the relevant protector in laws and regulations of Mexico and therefore free for General use of the international scientific community. BCIERMMI is part of the media of ECORFAN-Mexico, S.C., E: 94-443.F: 008- (www.ecorfan.org/ booklets)