14th AeroCom
3rd AeroSAT   and   1st AerChemMIP
workshops

October 5 – October 9, 2015
ESA ERSIN, Frascati, Italy

hosts: **Simon Pinnock** and **Claus Zehner** (ESA)
co-organizers: Michael Schulz / Stefan Kinne / Mian Chin / Thomas Popp / Ralf Kahn

presentations

- **oral science presentations** … are allotted **20 min**
    - o   with extra 10 minutes of discussions

- **oral** presentations of future **experiment proposals** … are allotted **10 min**
    - o   with extra 5 minutes for discussion

- **poster introductions**…are allotted 2 min
    - o   posters will hang during the entire meeting
    - o   send 1-or 2-page powerpoint (".ppt") summarizing slide(s) (NOT pdf) to stefan.kinne@mpimet.mpg.de well **before** the meeting …. so that all introductions can be combined into a single ppt. presentation

Monday, October 5, 2015 *AeroCom*

8:00 – 9:30 **AeroCom/AeroSAT registration**
(50 Euro workshop fee will be collected at registration**)**

time to **hang-up posters** and to mingle

9:30 – 11:00 **SESSION 1** **ESA / AeroCom welcome and dust**
tbd. **10min** *ESA welcome*
M. Schulz **20min** *AeroCom welcome*
H. Yu **20min** *Simulated Trans-Atlantic Dust vs CALIPSO and ground data*
P. Ginoux **10min** *Proposal: Anthropogenic dust experiment*

11:00 – 11:45 coffee-break (extended to **hang-up posters**)

chair: ***???***

11:45 – 13.15 **SESSION 2** **vertical distribution**
R. Ferrare **20min** *Comparisons of Airborne HSRL and Modeled Aerosol Profiles*
S. Schwarz **10min** *Measurements of black carbon vertical profiles versus modeling*
M. Val Martin **10min** *A fire emission plume injection height parameterization*
P.L. Ma **10min** *Proposal: A New Aerosol Lidar Simulator for Climate Models*
P. Stier **10min** *Satellite simulators for AeroCom exercises*

discussions

13:15 – 14:30 lunch

chair: ***???***

14:30 – 16:00 **SESSION 3** **biomass and nitrate**
M. Petrenko **20min** *AeroCom Biomass Exp: Constraining emission with satellite data*
X. Liu **20min** *Impacts of S. Afr wildfire aerosols on SE Atlantic stratocumulus*
H. Bian **20min** *AeroCom Phase III Nitrate experiment: preliminary analysis*
F. Paulot **10min** *Proposal: Sensitivity of nitrate aerosols to emissions/chemistry*

discussions

16:00 – 16:30 coffee-break

chair: ***???***

16:30 – 17:30 **SESSION 4** **other model-observation intercomparisons**
B. Andrews **20min** *AeroCom INSITU: in-situ obs at surface vs model simulations*
M. Chin **10min** *Results from AeroCom III/HTAP2 model experiments*
M. Chin **10min** *Proposal of UTLS aerosol analysis*

discussions

17:30 – 19:00 ESA sponsored **ICE-breaker** and **poster viewing**

chair: ???

8:45 – 10:45   poster introductions

short oral introduction of each poster
(max 2 slides / max 2 minutes)   *in alphabetic order*

10:45 – 11:45   coffee-break + **poster viewing**

chair: ???

11:45 – 13.15   SESSION 5   radiative forcing
B. Samset   **20min** *Humidity: Comparisons to obs and radiative forcing impacts*
P. Stier   **10min** *Radiative Forcing WG & Exp. on Aerosol Effects on Convection*
G. Myhre   **10min** *AeroCom semi-direct aerosol effect intercomparison exercise*
K. Carslaw   **10min** *Proposal: statistical approach to quantify model uncertainty*
L. Lee   **10min** *Proposal: multi-model perturbed parameter ensemble (MMPPE)*

discussions

13:15 – 14:30   lunch

chair: ???

14:30 – 15:00 T. Popp   20min ESA's aerosol CCI initiative

15:00 – 16:00 poster viewing time / relax + coffee

chair: ???

16:00 – 17.30   SESSION 6   indirect effects
M. Schulz   **10min** *Control exercise to monitor model development*
J. Quaas   **10min** *The Aerosols-Clouds-Precipitation-and-Climate (ACPC) initiative*
A. Gettelman **20min** *Tropospheric Volcanic Aerosols and Climate: impacts for testing*
S. Ghan   **10min** *update on indirect effect working group*

discussions

19:00 –   dinner at Vecchia Frasca, Frascati

Via G. Buttarelli, 12

O   **the circle O marks the location of the daily bus pick-up / drop off**

Wednesday, October 7, 2015   *AerChemMIP*

chair: ???

8:30 - 9:00 **AerChemMIP registration and poster viewing**
          *(**no fee** will be collected for this day)*

9:00 - 10:20 **SESSION 7**   **AerChemMIP background**
          ESA-official   *welcome*
          V. Eyring   *CMIP 6 goals and status*
          Schulz, Collins, Lamarque   *overview of AerChemMIP*
          P. Forster   *RFMIP*

10:00 – 11:00 **ALL**   *discussions with AerChemMIP chairs*

11:00 – 11:30 coffee-break

chair: ???

11:30 – 12.15 **SESSION 8**   **emission (input)**
          S.Smith   *historical and future emissions*
          M.Hegglin   *tropospheric and stratospheric ozone data*
12:15 – 12:45   **ALL**   *needed model input   - discussions with AerChemMIP chairs*

12:45 – 13.15 **SESSION 9**   **aerosol forcing fields (input)**
          G.Myhre   *AeroCom2 Model Median data-sets*
          S.Fiedler   *Aerosol Plume climatology (MACv2-SP)*

13:20 – 14:30 lunch

14:30 – 15:30 **SESSION 10**   **AerChemMIP simulation plan**
          ALL   *experiments and diagnostics - discussion with AerChemMIP chairs*

15:30 – 16:00 coffee

chair: ???

16:00 – 17.30 **SESSION 11**   **AerChemMIP science talks (12 +3 min)**
          M. Bollasina   *Atmospheric circulation as mediator of aerosol-driven climate impacts*
          C. Randles   *MERRA Version 2: the Goddard aerosol reanalysis 1979 to present*
          A. Voulgarakis *Local and remote climate effects of regional pollutant emissions*
          K. Bowman   *Emergent constraints in chemistry-climate interactions*
          T. Shepherd   *The climate impact of changes in halocarbons and CO2 in tropical UTLS*
          C. Timmreck   *Coordinated climate response for stratospheric aerosol*

17:30 – 19:00 ESA sponsored **ICE-breaker** and **poster viewing**

Thursday, October 8, 2015 *AeroSAT*

*chair: **R. Kahn***

9:00 – 10:30 SESSION 12 new examples of satellite retrievals (15 min each)
    T. Popp *Brief introduction to AEROSAT and meeting goals (5 min)*
    A. Lyapustin *Joint AOT-Single Scattering Albedo Retrieval in Algorithm MAIAC*
    L. Klüser *IASI Dust algorithm inter-comparison in ESA Climate Change Initiative*
    G. Curci Satellite *Aerosol Composition Retrieval using Neural Networks*

    discussions (25 min)

10:30 – 11:00 coffee-break

*chair: **R. Kahn***
*proposed rapporteur: **M. Chin***

11:00 – 13.15 SESSION 13 satellite – model interaction *(needs and supply)*
                seed questions by the chair (5 min)
    P.Stier / S.Ghan / A.Gettelman *modeling needs* **(20 min)**
                discussions (110 min)

13:15 – 14:30 lunch

14:30 – 15:30 poster viewing time

15:30 - … leaving in consecutive groups to the

    common excursion to the Merumalia vineyard
              for wine and olive oil tasting

Friday, October 9, 2015   *AeroSAT*

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*chair: **T. Popp***
*proposed rapporteur: **M. Garay***

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9:00 – 10:30   **SESSION 14   aerosol type from satellite (15 min each)**
                                    seed questions by the chair   (5 min)
              L. Mona   *Aerosol typing – a key information*
              R. Kahn   *Progress toward a global aerosol type climatology*
              discussions (55 min)

10:30 – 11:00 coffee-break

<div align="right">

*chair: **T. Popp***

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11:00 – 11.50   **SESSION 15   combined use of satellite data (15 min each)**
              C. Ichoku   *Level-2 AOD median from multiple satellite sensor retrievals*
              M.Christensen *New Assessment of Aerosol-Cloud Interactions with ORAC (A)ATSR*
              discussions (20 min)

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*proposed chair: **G. de Leeuw***
*proposed rapporteur: **L. Sogachewa***

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11:50 – 13:15   **SESSION 16   pixel-level uncertainties (15 min each)**
                                    seed questions by the chair   (5 min)
              A. Povey   *Ensemble techniques to satellite remote sensing uncertainty estimation*
              F. Patadia   *Pixel Level Uncertainty in MODIS AOD Dark Target Algorithm*
              discussions (50 min)

13:15 – 14:30 lunch

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*proposed chair: **S. Pinnock***
*proposed rapporteur: **A. Sayer***

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14:30 – 16.00   **SESSION 17   Long-term satellite-based time series (15 min each)**
                                    seed questions by the chair   (5 min)
              R. Levy   *Aerosol retrieval for MODIS, VIIRS and beyond*
              Y. Govearts   *MPF/MVIRI potential for aerosol retrieval*
              P. Lynch   *Towards an 11-year global gridded AOT reanalysis*
              discussions   (40 min)

16:00 – 16:30 coffee

16:30 – 17.00   **SESSION 18   wrap up**
              Kahn/Popp   AEROSAT *action items & conclusions*

AeroCom / AeroSAT posters

K.Aoki
Validation plan of GCOM-C1/SGLI satellite aerosol optical properties retrievals from ground-based and ship-borne sky radiometer

Y.Balkanski, L. Menut, S. Jourdain, E. Garnier, C. Eschstruth, M. Vrac, R. Vautard and P. Yiou
Simulation of the Laki volcano based upon analogs of winds

P.Colarco
Diversity of Aerosol Simulations in the NASA GEOS-5 Model: Impacts of Meteorology and Spatial Resolution

G.De Leeuw L. Sogacheva, P. Kolmonen, G. Saponaro, T.H. Virtanen, E. Rodriguez, K. Atlaskina and A.-M. Sundström
Retrieval of Aerosol and Cloud Properties from ATSR using ADV/ASV

M.Deushi K. Yoshida, H. Yoshimura and N. Oshima
Dependence of stratospheric mean age of air on model resolution and transport scheme in REF-C1 simulations

S.Dhomse Mann, Carslaw, Flemming, Morcrette, Engelen, Remy, Boucher, Hewson and Woodhouse
Evaluation of global aerosol properties simulated by the high resolution coupled chemistry-aerosol-microphysics model C-IFS-GLOMAP

A.Di Noia
Application of neural networks to aerosol retrievals from PARASOL over ocean: First results

O.Dubovik
Detailed properties of aerosol retrieved from satellites using GRASP algorithm

M.Fiebig
Confronting AeroCom models with particle size distribution data from surface in situ stations, episode 2

M.Garay, M.A. Bull, D.J. Diner and E.G. Hansen
Resolution and Content Improvements to the MISR Operational Aerosol Product

S.Ghan
Constraining Cloud-Aerosol Interactions in Climate Models

E. Gryspeerdt
The aerosol optical depth - cloud fraction relationship in observations and global models

M.Grzegorski
Retrieval of aerosol optical properties over land using PMAp

H.C.Hansen J. Acosta-Navarro, V. Varma, I. Riipinen, , Ø. Seland , A. Kirkevåg, H. Struthers and T. Iversen
How does European aerosol emissions affect the Arctic climate?

O.Hasekamp
Polarimetric Remote Sensing of Atmospheric Aerosols

B.Johnson
Model and satellite reveal large aerosol-cloud interactions from Icelandic eruption Holuhraun

O.Jorba
Aerosol Modelling with the global online NMMB/BSC Chemical Transport Model

O.Kalashnikova F. Xu, C. Ge, J. Wang, M.J. Garay, D.J. Diner, Huikyo Lee, K. Suzuki, A. Braverman and R.A. Kahn
Constraining PM speciation by combining multiangular and polarimetric remote sensing with in-situ observations and chemical transport modeling

Climatology of component aerosol optical depth from MISR compared with atmospheric chemistry models

T.Keslake, M. Chipperfield, G. Mann, S. Dhomse. J. Flemming, S. Remy and W. Morgan
Biomass burning influences on atmospheric composition: impact of aerosol and gas phase data assimilation

S.Kinne
Aerosol radiative effects and climate impact (radiative forcing)

Z.Kipling
Quantifying global aerosol effects on convection using the Convective Cloud Field Model (CCFM)

A.Kirkevag K. Alterskjær, A. Grini, T. Iversen, D. Olivie, Ø. Seland and M. Schulz
Preliminary estimates of Aerosol Effective Radiative Forcing in CAM5-Oslo/NorESM2

K.Knobelspiesse
Progress of the NASA ACE Mission Polarimeter Working Group instrument inter-comparison

H.Kokkola
Contribution of water to modeled aerosol direct effect

H.Korhonen
Model intercomparison of Remote Climate Impacts of anthropogenic Aerosols

C.Lacagnina
Aerosol Single Scattering Albedo over the global oceans: comparing PARASOL retrievals with AeroCom models

L.Lee
Pinatubo Emulation in Multiple Models (POEMs): planned co-ordinated experiments for SPARCs SSiRC initiative

J.Mulcahy
Towards UKESM: Implementation and evaluation of the GLOMAP-Mode aerosol scheme

G.Mann
Evaluation of tropospheric aerosol properties from the UK Earth System Model against in-situ observations and multi-model ranges from the AeroCom aerosol microphysics intercomparison

The SSiRC Historical Eruption SO2 Emissions Assessment (HErSEA): intercomparison for interactive stratospheric aerosol models

Whole-atmosphere chemistry-aerosol-microphysics simulations of the Mt. Pinatubo eruption: Part 2: Quantifying the direct and indirect (dynamical) radiative forcings

L.Marshall
Disentangling the eruption source parameters that control the climate effects of volcanic eruptions

M.Michou, P.Nabat, L.Watson and D.Saint-Martin
Recent evolutions of the aerosol scheme in the CNRM climate model, in view of CMIP6 simulations

T.Mielonen
Does Increasing Temperature Increase Carbonaceous Aerosol Direct Radiative Effect over Boreal Forests?

J.Mollard
Constraining aerosol optical properties in AeroCom models and HadGEM3-UKCA using AERONET and POLDER observations

O.Morgenstern
The Deep South Clouds & Aerosols project: Improving the modelling of clouds in the Southern Ocean region

P.Nabat
Evaluation of the CNRM-CM aerosol scheme using the associated regional climate model CNRM-RCSM

D.Neubauer
Aerosol-cloud interactions in ECHAM6-HAM2 and the (A)ATSR dataset

D.Olivie
SLCP emission reduction: how to simultaneously improve air quality and limit climate change?

N.Oshima
Impact of black carbon aging on its spatial distribution and radiative effect using a MRI global aerosol model

X.Pan
Comparison of GFED, QFED and FEER biomass burning emissions datasets in a global model

H.Pearce
Nitrate Aerosol: Implications for European Air Quality and Climate Development

A.Rap
Impact of biomass burning aerosol on Amazon plant productivity through changes to diffuse radiation

M.Righi, V. Eyring, J. Hendricks, C. Kaiser and ESMValTool Development Team
Aerosol evaluation with the Earth System Model eValuation Tool: A community diagnostic and performance metrics tool.

S.Rumboldt
Ammonium nitrate aerosol in UKESM1

M.Sand
Aerosols at the poles

A.Sayer
Deep Blue aerosol updates in 2015

N. Schutgens
Will perfect models agree with perfect observations?

Comparing apples and oranges: the Community Intercomparison Suite

X.Shi
Effect of vertical fluctuations on estimating the anthropogenic aerosolindirect effects through cirrus clouds

J.Schwarz
Measurements of black carbon (BC) vertical profiles

S.Shim
Climate Effects of Aerosol-Cloud Interactions over East Asia

L.Sogacheva, P. Kolmonen, T.H. Virtanen, E. Rodriguez, G. Saponaro, A.-M. Sundström and G. de Leeuw
Cloud post-processing for the ADV/ASV AATSR aerosol retrieval algorithm: regional aspects

P.Stier
Limitations of passive satellite remote sensing to constrain global cloud condensation nuclei

T.Takemura
Integrated assessment on effects of short-lived climate pollutants (SLCPs) in Asia

Q.Tan, M. Chin, H. Bian and V. Aquila
Evaluation of modeled SO2 in the UTLS region with both satellite and aircraft data

O.Torres
Improved OMI record of 500 nm aerosol Single Scattering Albedo

K.Tsigaridis
Organic aerosol volatility parameterizations and their impact on atmospheric composition and climate

S.Tsyro
Aerosols in the EMEP model: evaluation and experiments using integrated observations

D.Winker
All-sky aerosol direct radiative effect and impact of uncertainties in aerosol properties

Y.Xue
Inter-comparison of three AATSR L2 AOD products over China" for AeroSat

H.Zhang

The updated effective radiative forcing of major anthropogenic aerosols and their effects on global climate at present and in the future
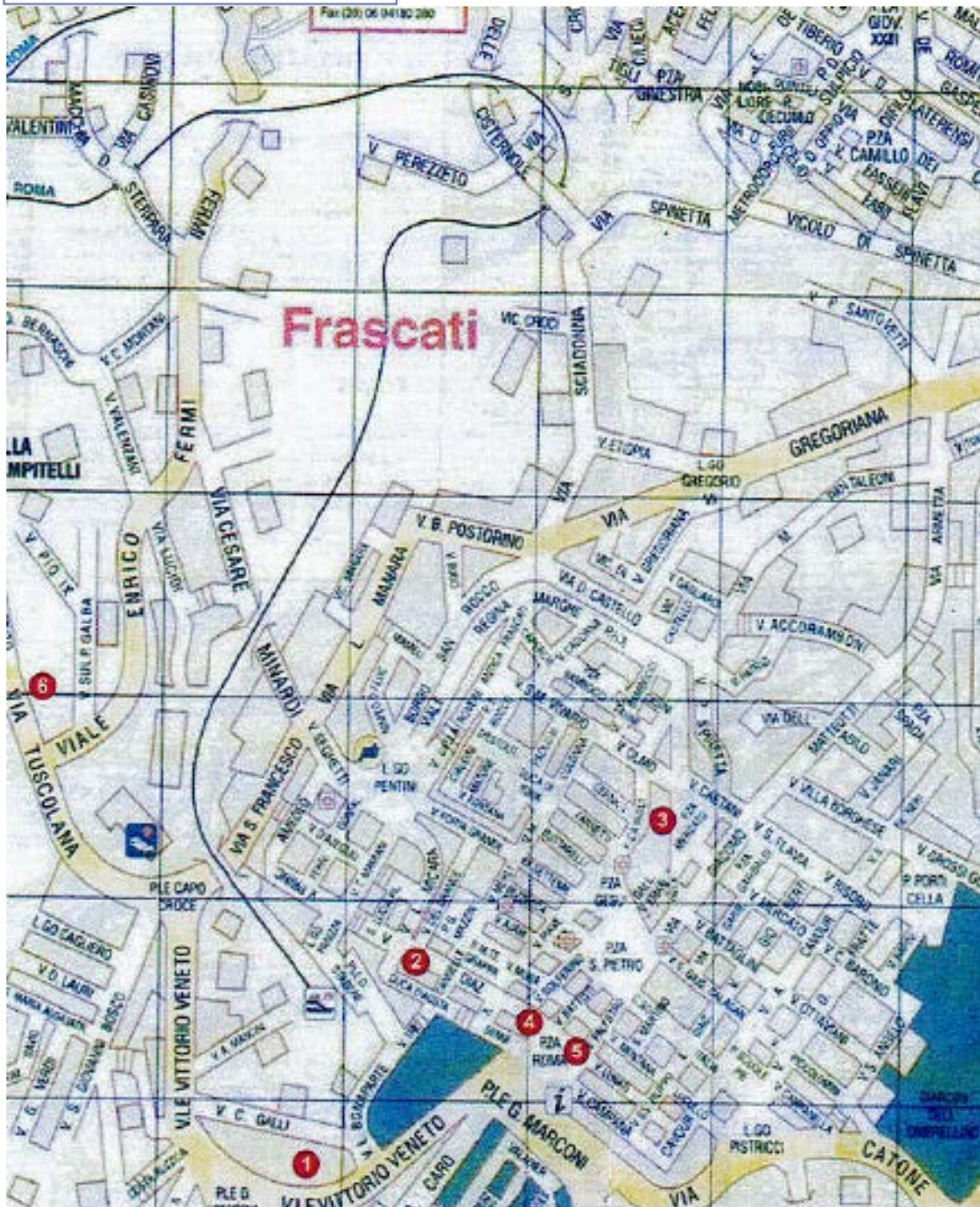
space for your notes …

the **bus leaves** each day at Piazza Marconi (***at 'i' near '5'***) at **7:45 am** … and returns to it in the evening

USEFUL INFORMATION

Public Transportation to Rome (other than train)

Bus Connection to Underground

You can get a bus from the station in the centre of Frascati just in front of the Town Hall (i.e., the "Comune") in Piazza Marconi. The bus will take you as far as Anagnina underground station (end of underground Line A).

Timetable of Frascati buses can be downloaded at the following URL:

http://www.cotralspa.it/PDF_Orari_Comune/Frascati.pdf

Bus tickets must be bought in advance and can be purchased at the tobacconist's (cost is 1.00 €). We suggest you to buy the ticket back at the same time.

The bus stop at Anagnina is near the newsstand outside the station (right exit, up the stairs).

Underground

In Rome there are two underground lines, i.e. Line A and Line B. Maps and timetables can be downloaded at the following URL:

http://www.atac.roma.it/index.asp?p=2

Service on both Line A and Line B runs Sunday to Thursday from approximately 5:30 to 23:30. On Friday and Saturday, service runs from approximately 5:30 to 1:30. Service on Line A is temporarily suspended at 21:00, except on Saturday. Shuttle bus service is provided.

Single tickets cost 1.00 € and can be purchased at all stations, as well as from tobacconists and lots of newsstands (more information is available at http://www.atac.roma.it/index.asp?p=14).

Taxi

Taxis in Rome normally charge according with mileage but we suggest you to try to agree a price in advance for any trip from and to Frascati.

Shopping Hours

Shopping hours in Frascati are as follows:

08.30 - 13.00
16.30 - 19.30

Shops normally close on Thursday afternoon and Sunday.
The GS-Carrefour supermarket in the centre of Frascati is open from 8.00 to 20.00 Monday to Sunday.

Shopping hours in Rome are similar except that most of them are closed on Monday morning and open around 16.00 on Monday afternoon. Food shops in Rome generally close on Thursday afternoon and are open on Monday morning.

TRAIN CONNECTIONS
Please check on www.trenitalia.it

A : **ROME TERMINI ↔ FIUMICINO AIRPORT**

Trains from Fiumicino Airport to Rome Termini station leave every 30 minutes from 06:38 to 23:38.

Trains from Rome Termini station (platforms 25-27) to Fiumicino Airport leave every 30 minutes from 05:52 to 22:52.

Timetable may vary on Sunday and public holidays. The journey takes about 30 minutes.

One-way tickets cost 14.00 €. Tickets can be purchased at vending machines inside both domestic and international arrival halls as well as at train stations.

B : **ROME TERMINI ↔ FRASCATI**

The journey takes about 30 minutes. One-way tickets cost 2.10 €.

In Frascati, tickets can be purchased at the bar into the station or the newsstand in the small gallery in front of Piazza del Gesù.

At Rome Termini station tickets may be purchased at the check-in area of platform 25 or the self-service machines in the main hall.

All trains run Monday to Saturday (see the tables below). Sunday trains are marked with an *asterisk.

Departure: Frascati	Arrival: Rome
06:37	07:06
07:38	08:06
08:37 *	09:06
09:37	10:06
10:34*◉	11:13
12:37 *	13:06
13:48	14:13
14:37 *	15:06
15:37	16:06
16:37 *	17:06
17:37	18:06
18:37 *	19:06
19:37	20:06
20:37 *	21:06
21:37	22:06
22:39 ◉	23:15

Departure: Rome	Arrival: Frascati
06:35	07:10
07:35 *	08:05
08:54	09:23
09:54 *	10:23
11:54 *	12:23
12:54	13:23
13:54 *	14:23
14:54	15:23
15:54 *	16:23
16:54	17:23
17:54 *	18:23
18:54	19:23
19:54 *	20:23
20:54	21:23
21:54	22:23

◉ = change at Ciampino *train on Sundays

C : **ROME TERMINI ↔ ESRIN (Tor Vergata)**

The Tor Vergata station is located 50 meters far from ESRIN (turn left at the exit, go up the stairs, cross the bridge and you are at the main gate of ESRIN). The journey takes about 20 minutes. One-way tickets cost 1.50 €.

Tickets may be purchased at the ESRIN Travel Office. At Rome Termini station tickets may be purchased at the self-service machines in the main hall.

When travelling from Rome to Tor Vergata you are advised to travel in the front part of the train (first four carriages). All trains run Monday to Saturday (see the tables below). Sunday trains are marked with an asterisk.

Departure: Tor Vergata	Arrival: Rome
06:38	06:59
07:02	07:27
07:21	07:41
07:53	08:13
08:12	08:34
09:04	09:27
09:22	09:48
11:06 *	11:27
12:26	12:48
14:20 *	14:48
15:00 *	15:20
15:23	15:48
16:26 *	16:48
16:48	17:13
17:26	17:48
17:48	18:13
18:26	18:48
18:48	19:13
19:22	19:48
19:41	20:13
20:26	20:48
21:22 *	21:48
21:48	22:13
22:15 *	22:41
23:10	23:30

Departure: Rome direction Cassino / Frosinone	Arrival: Tor Vergata
06:21	06:41
06:28	06:48
07:07*	07:24
08:35	08:55
09:14	09:31
10:14 *	10:35
12:14	12:31
13:14	13:31
14:14	14:31
14:49	15:06
15:14	15:31
15:49	16:06
16:14	16:31
16:49	17:06
17:14	17:31
17:49	18:06
18:14	18:31
18:49	19:06
19:14	19:32
19:49	20:06
20:14	20:30
21:14 *	21:31
23:14 *	23:32

A combination of A + B will bring you to and from the centre of Frascati. A combination of A + C will bring you to and from ESRIN.