

Tabla de Contenido

Resumen	ii
Tabla de Contenido	iv
Índice de Tablas	v
Índice de Figuras	vi
CAPÍTULO 1. Introducción y propuesta metodológica.	7
CAPÍTULO 2. Multipurpose reservoir operation: a <i>trade-off</i> analysis between hydropower generation and irrigated agriculture.	11
Abstract.....	11
2.1 Introduction.....	12
2.2 Modeling Framework.....	14
2.2.1 Conceptual framework.....	14
2.3 Basic models: Grid-wide power scheduling and basin-wide agro-economic.....	15
2.2.3 Grid-wide power scheduling model	15
2.2.2 Basin-wide agro-economic model.....	15
2.4 Basin-wide hydro-economic model.....	16
2.4.1 Solution strategy	17
2.5 Results and Discussion.....	19
2.6 Conclusions.....	24
CAPÍTULO 3. A <i>trade-off</i> analysis between irrigated agriculture and hydropower under market power by hydropower reservoirs operators.	25
Abstract.....	25
3.1 Introduction.....	26
3.2 Methodology framework	27
3.2.1 Methodology Overview	27
3.2.2 Power system operational model.....	28
3.2.3 Hydropower strategic bidding model	30
3.3 Results and discussion.....	32
3.4 Conclusions	38
CAPÍTULO 4. Conclusiones y trabajo futuro	39
BIBLIOGRAFÍA	41

Índice de Tablas

Table 1. Input data to calibrate the Agro-economic model	16
--	----

Índice de Figuras

Fig. 1.1 Propuesta Metodológica.....	9
Fig. 2.1 Hypothetical system schematic, which links the different scales and water users.	14
Fig. 2.2 Monthly water demand functions.....	20
Fig. 2.3 Hydropower Marginal Value	20
Fig. 2.4 Frequency analysis of irrigation releases. a) Total Release Sep-Dec. b) Total Release Jan-Apr.....	21
Fig. 2.5 Reservoir releases and ratio of basin-wide benefits.....	22
Fig. 2.6 Frequency analysis of water users' benefits. a) Hydropower. b) Irrigation.....	23
Fig. 2.7 Benefit associated with the use of water	23
Fig. 3.1 Methodology overview	28
Fig. 3.2 Residual Demand Curve.....	33
Fig. 3.3 Cumulative frequency of reservoir releases. a) Total hydropower releases non-irrigation season b) Total hydropower releases irrigation season c) Total irrigated agriculture releases.	34
Fig. 3.4 Cumulative frequency of water users' revenues. a) Irrigated agriculture b) Hydropower.....	35
Fig. 3.5 Cumulative frequency of power system costs. a) Total cost non-irrigation season b) Total cost irrigation season.....	36
Fig. 3.6 Cumulative frequency of average storage in the planning horizon. a) Storage non-irrigation season b) Storage irrigation season.....	37
Fig. 3.7 Reservoir operation and system cost of one year of simulation. a) Normal inflow hydrologic scenario b) Dry inflow hydrologic scenario.....	38